02
82-10

ontario hydro
research division
COMPLIMENTARY COPY
Please Credit Ontario Hydro Research if
Reproduced in Whole or in Part

BRUCE GS 'B' COMMISSIONING BIOLOGICAL STUDY TERRESTRIAL PROGRAM YEAR I JANUARY TO NOVEMBER 1984

Report No 87-183-K

R.W. SHEEHAN
Field Biologist
Biological Research Section
Chemical Research Department

ABSTRACT

A survey of vegetation and wildlife on the BNPD site was conducted during 1984. Vegetation and wildlife species observed on the site are not considered endangered, and are generally typical of the area. Beaver activity and poor drainage at the railway line were responsible for flooding of some vegetation on the site. Several locations along the Tie Road fence were considered as potential points for white-tailed deer to enter and leave the site. Three deer road-kills were reported at the site during the 1984 survey.

740634-143-401-92	file 837.321BRU	date September 21, 1987	report no 87-183-K

91602
new 82-10

ontario hydro
research division

EXECUTIVE SUMMARY

BRUCE GS 'B' COMMISSIONING BIOLOGICAL STUDY
TERRESTRIAL PROGRAM YEAR 1
JANUARY TO NOVEMBER 1984

R. W. Sheehan
Field Biologist
Biological Research Section

During 1984, vegetation and wildlife surveys of BNPD and adjacent areas were conducted at the request of Environmental Studies and Assessments Department. The objectives of the studies were to describe the terrestrial environment in sufficient detail so that, in conjunction with earlier studies, the effects of construction and operation of Bruce GS 'B' could eventually be determined.

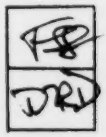
Forest stands on the site consisted of uneven aged conifers, immature, mature and uneven aged deciduous, and mixed stands. The forest species were typical of the Great Lakes - St. Lawrence Forest Region. Of the 42 herbaceous plants identified none is considered endangered.

Some vegetation losses are occurring on the site due to flooding by beaver activity and possibly to poor drainage around the railway line, southwest of the North Access Guardhouse. Improvements to the Baie du Dore cottage road appear to have reduced seasonal flooding of vegetation east of the road.

None of the 121 bird, 18 mammal and 8 amphibian and reptile species observed on the site is considered endangered. Four of the bird species, however, are reported on the blue list identifying non - cyclical avian population declines within North America. Blue listed birds are not considered rare or endangered.

The number of ring-billed and herring gulls nesting on the Bruce GS 'A' site has not changed substantially from counts made in 1980 and 1981. There was no evidence of gulls nesting elsewhere on the BNPD site.

White-tailed deer were observed on the site. Several locations along the Tie Road fence were identified as potential areas where deer could enter or leave the site. On site deer road kills during 1984 (n=3) appeared to be less frequent than in earlier years.



job	file	date	report no.
740634-143-401-92	837.321BRU	September 21, 1987	87-183-K

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 METHODS	1
2.1 Vegetation	1
2.1-1 Site Vegetation	1
2.1-2 Vegetation Plots	4
2.1-3 Wetlands	4
2.2 Wildlife	4
2.2-1 Avian Species	4
2.2-2 White-tailed Deer	7
2.2-3 Larid Distribution	7
2.2-4 Other Species	7
3.0 RESULTS AND DISCUSSION	8
3.1 Vegetation	8
3.1-1 Site Vegetation	8
3.1-2 Vegetation Plots	13
3.1-3 Wetlands	13
3.2 Wildlife	14
3.2-1 Avian Species	15
3.2-2 White-tailed Deer	18
3.2-3 Larid Distribution	23
3.2-4 Other Species	24
4.0 SUMMARY AND CONCLUSIONS	24
5.0 ACKNOWLEDGEMENTS	27
REFERENCES	28
APPENDICES	30
DISTRIBUTION	last page

LIST OF TABLES

		PAGE
TABLE 3.1-1	Dominant Tree and Shrub Species BNPD, 1984	10
TABLE 3.1-2	Permanent Vegetation Plot Classification BNPD, 1984	14
TABLE 3.2-1	Birds On 1986 Blue List Observed Along Transects BNPD, 1984	15
TABLE 3.2-2	Avian Species Diversity Along Transects BNPD, 1984	16
TABLE 3.2-3	Dominant Identified Avian Species BNPD, 1984	17
TABLE 3.2-4	Dominant Identified Avian Species By Transect BNPD, 1984	19
TABLE 3.2-5	Mammal Sightings BNPD, 1984	25
TABLE 3.2-6	Reptile and Amphibian Sightings BNPD, 1984	26

LIST OF FIGURES

		PAGE
FIGURE 1.0-1	General BNPD Site Layout, 1984	2
FIGURE 2.1-1	Vegetation Transects BNPD, 1984	3
FIGURE 2.1-2	Permanent Vegetation Plot Locations BNPD, 1984	5
FIGURE 2.2-1	Avian Transect Locations BNPD, 1984	6
FIGURE 3.1-1	BNPD Site Vegetation Classification, 1984	9
FIGURE 3.2-1	White-tailed Deer Observations BNPD, 1984	21
FIGURE 3.2-2	Huron Fringe Deeryard Within BNPD Vicinity	22

LIST OF APPENDICES

		PAGE
APPENDIX A	Vegetation Along Transects BNPD, 1984	30
APPENDIX B	Permanent Vegetation Plot Locations BNPD, 1984	46
APPENDIX C	Vascular Plant Species BNPD, 1984	48
APPENDIX D	Tree and Shrub Species BNPD Vegetation Plots, 1984	50
APPENDIX E	Plant Species BNPD Vegetation Plots (1 m x 1 m), 1984	53
APPENDIX F	Avian Species Identified Along Transects BNPD, 1984	57
APPENDIX G	Avian Species List BNPD, 1984	66
APPENDIX H	Avian Species, Total Numbers and Per Cent Composition BNPD, 1984	69
APPENDIX I	Bird Transect Habitat BNPD, 1984	72
APPENDIX J	Additional Waterfowl Sightings BNPD, 1984	76
APPENDIX K	Additional Avian Sightings BNPD, 1979 - 1984	79
APPENDIX L	Mammals Common To The BNPD Area	80

ontario hydro
research division

To: Mr. C.W. Dawson
Design and Development Division
H10G1

BRUCE GS 'B' COMMISSIONING BIOLOGICAL STUDY
TERRESTRIAL PROGRAM YEAR I
JANUARY TO NOVEMBER 1984

1.0 INTRODUCTION

The purpose of pre-operational studies at Ontario Hydro generating stations is to describe the environment in sufficient detail so as to determine the effects of station construction and operation on the environment when similar studies are conducted during the operational phase of the station. Although a formal pre-operation terrestrial study was not conducted at Bruce GS 'B' (Figure 1.0-1), studies have been conducted from which a general description of the vegetation on the site could be developed (Hilts and Parker 1980, Acres Consulting Services 1981, OHRD Report 82-107-K, Evans 1982). In addition surveys of nesting gulls (OHRD Report No 83-96-K) and wildlife (Acres 1981) have been conducted on or adjacent to BNPD.

The objectives of the 1984 terrestrial study at BNPD as requested by Environmental Studies and Assessments Department, were:

1) to characterize and map the vegetation communities and wetlands on the site; and,

2) to identify the extent of use of the site by wildlife, with particular emphasis on white-tailed deer, gulls and other birds.

2.0 METHODS

2.1 Vegetation

2.1-1 Site Vegetation

The BNPD site was arbitrarily divided into 4 survey transect zones (A, B, C and D) to aid in vegetation cruising (Figure 2.1-1). Ten linear survey transects were established 200 m apart within these zones, perpendicular to the southern BNPD site boundary. All tree and shrub species greater than 2 m in height (except ground junipers) and within 1 m of either side of the cruise line were tallied in 50 m plots at 100 m intervals. The height and diameter at breast height (DBH - 1.37 m) were estimated for each tallied tree and shrub. The forest vegetation present on the two 50 m intervals between tally plots was classified visually.

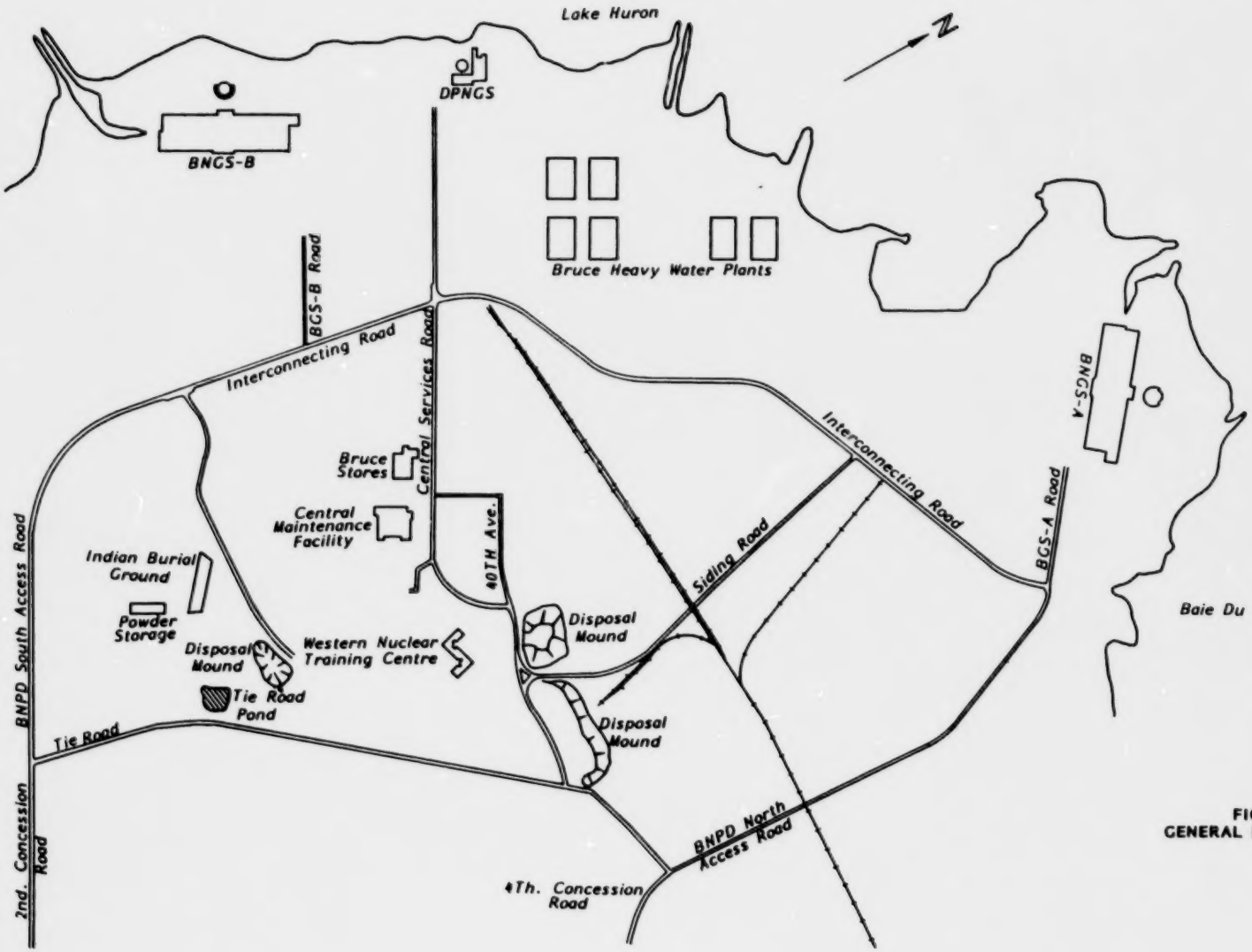


FIGURE 1.0-1
GENERAL BNPD SITE LAYOUT
1984

200689-RD

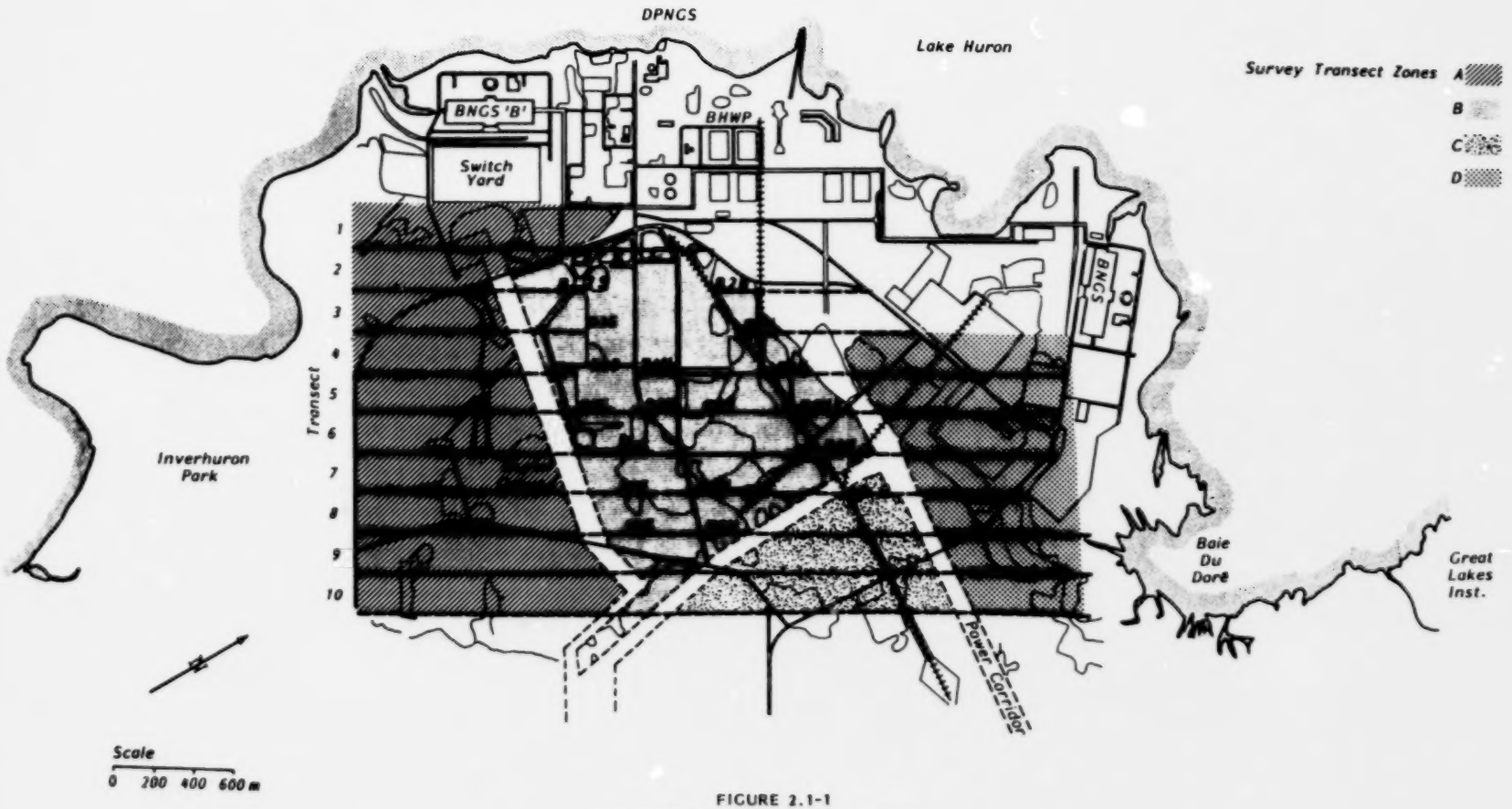


FIGURE 2.1-1
VEGETATION TRANSECTS BNPD, 1984

200455 RD

A two-member crew cruised the vegetation. The lead crew member acted as the compassman, chainman and recorder while the second person identified the vegetation. A hand held Silva Ranger 15 TD compass was used to determine transect direction. Plot width and minimum tree and shrub heights were measured with a 1 m stick.

The data from the tally sheets were entered on computer discs and analyzed to determine plot forest classification according to the Ontario Ministry of Natural Resources forest classification system (OMNR 1973, Appendix A). Tree age data were estimated from normal yield tables (OMNR 1981). A site forest vegetation map was then produced from the forest classifications determined from the tally plots, air photo interpretation and visual observations. Species diversity indicies within the forest classifications were calculated using the Shannon-Weiner Index.

2.1-2 Vegetation Plots

A total of 12 permanent 30 m by 30 m vegetation plots were established in representative forest types (n = 10), a non-maintained opening (n = 1) and a wetland (n = 1), to measure successional vegetation changes on the BNPD site (Figure 2.1-2, Appendix B). Red corner posts were erected in each corner of the 30 x 30 m plots. The plots were subdivided into quadrats in which all tree species greater than 1 m in height were identified and enumerated (Appendices C and D). One square metre plots were established in each corner of the 30 m by 30 m plots. All tree, shrub and herbaceous vegetation were identified and enumerated in the smaller plots. Grasses and sedges were not identified to species and were recorded as per cent cover within a plot (Appendices C and E).

2.1-3 Wetlands

Wetland areas were identified during the vegetation surveys and from 1984 air photos. These areas were then compared to previously identified wetland areas (Evans 1982) and 1978 air photos to determine the effect of construction activities on vegetation in the BNPD vicinity.

Water levels in the impoundments were estimated during site visits in order to determine approximate water level fluctuation.

2.2 Wildlife

2.2-1 Avian Species

Avian censuses were conducted in early July, mid September and early November in representative forest vegetation types, openings, wetlands and along the Lake Huron shoreline in the vicinity of the BNPD site. Sixteen transects were sampled in July and September and seventeen in November (Figure 2.2-1). The additional November transect was established at the Bruce GS 'B' discharge. During earlier surveys avian species were observed in the vicinity of the Bruce GS 'B' discharge but not as a regular transect.

Transect length was dependant upon the area that could be censused within a 40 minute sampling period. Trails and unused roads were used for access in areas of heavy cover to permit sampling without disturbing the birds. Sampling was conducted throughout the day commencing at 0730 hours and continued through an 8 hour period. Sampling was

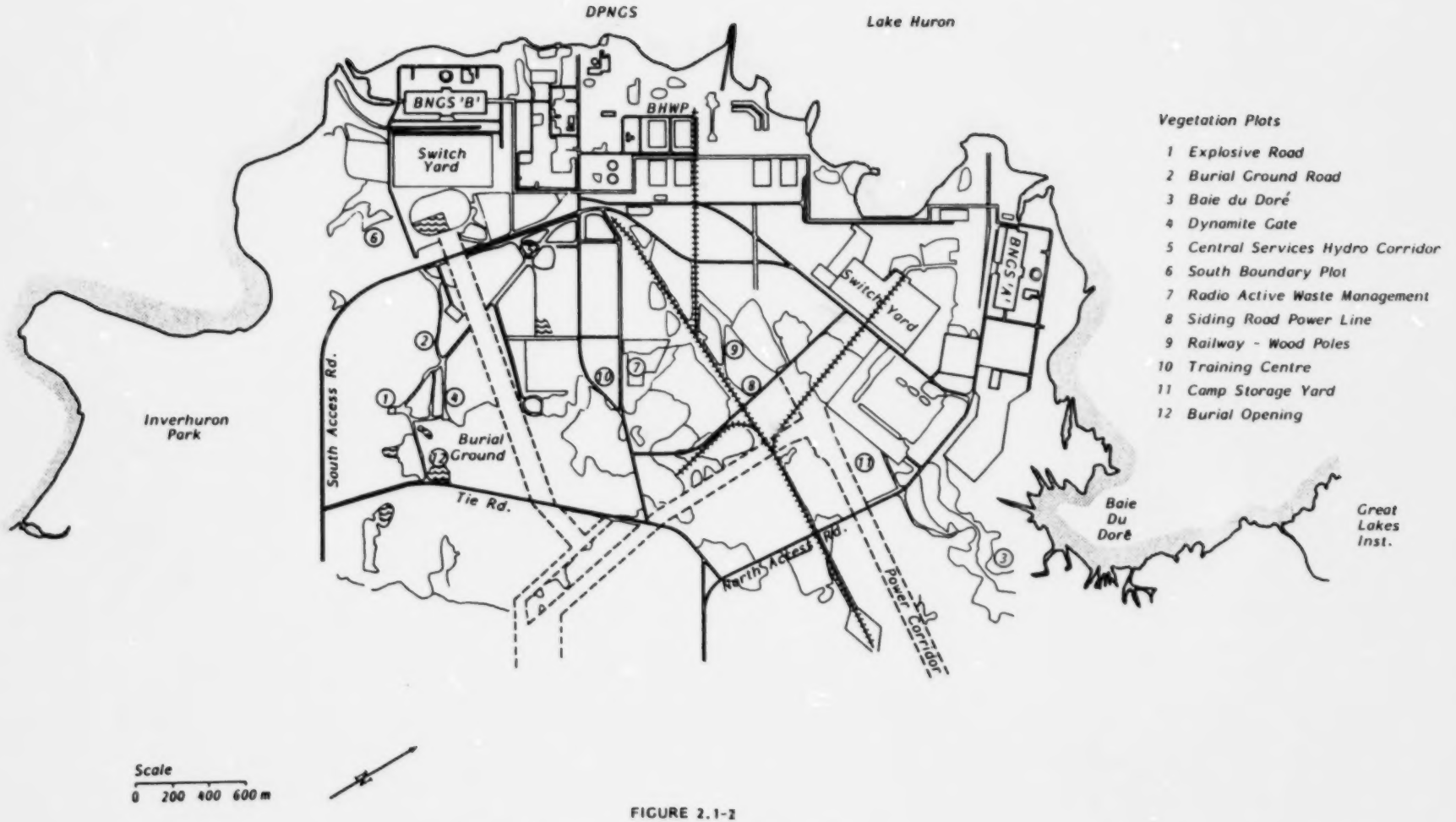


FIGURE 2.1-2

PERMANENT VEGETATION PLOT LOCATIONS BNPD, 1984

200457 RD

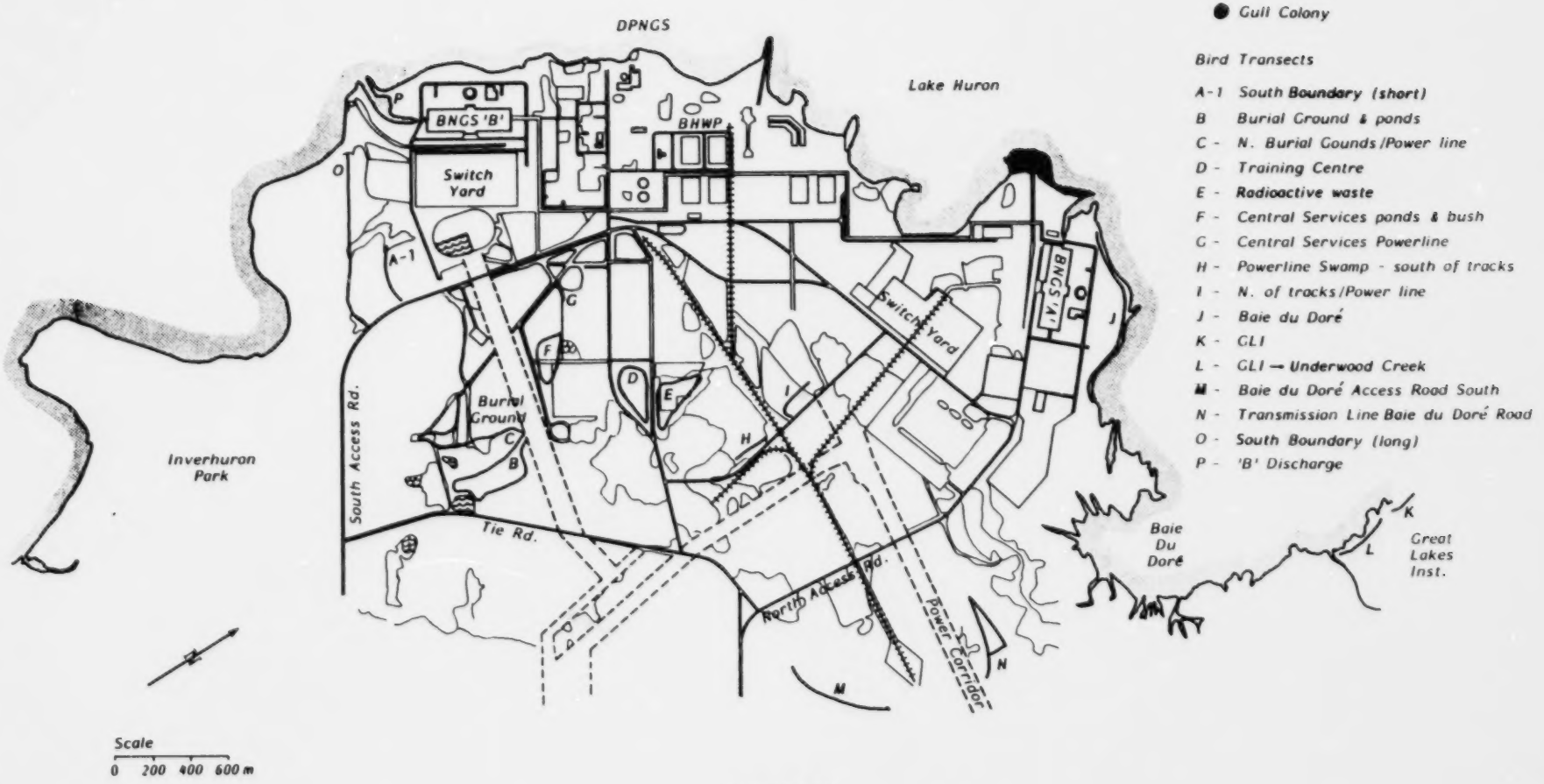


FIGURE 2.2-1

AVIAN TRANSECT LOCATIONS BNPD, 1984

200454 RD

scheduled to permit all transects to be sampled at least once in the early morning and late evening during each sampling period. All transects were censused a minimum of 3 times in each sampling period. Observer movement along a transect was dependant upon bird numbers and activity. All walking transects consisted of periods of slow walking and flushing combined with periods of sitting and standing. All birds observed visually or audibly were recorded to species or family when possible. The number of unidentifiable birds observed along each transect were recorded. Shoreline transects (J & P) were conducted from a vehicle and on foot by two observers. All other transects were censused by a single observer walking along each transect. The observers alternated census periods along individual transects. Waterfowl observations were recorded along the BNPD shoreline during regular aquatic sampling January to November in addition to the regular shoreline transects.

Bushnell 7 x 35 and 7 x 50 binoculars were used on all transects for avian observation. A Bushnell Spacemaster 20 x 60 spotting scope was also used on the shoreline transects.

Species diversity indicies for each transect were calculated using the Shannon-Weiner Index. Species composition was calculated for each transect and the entire site.

2.2-2 White-tailed Deer

Observations of white-tailed deer (*Odocoileus virginianus*) and deer sign were recorded during all site visits. Records of deer road-kills and hunting/poaching activity on site were kept by Bruce security personnel. The Tie Road fenceline area was surveyed in August for potential areas permitting deer movement on and off site. Steve Kerr, OMNR Owen Sound, was contacted for information concerning the white-tailed deer population data in the BNPD vicinity.

2.2-3 Larid (Gull) Distribution

Nesting gull studies were conducted on May 15 and 17 on the rehabilitated landfill areas between MacPherson Bay and the Bruce GS 'A' discharge (Figure 2.2-1). The colony was divided whenever possible into 2 m wide transects in which all active nests (eggs and/or chicks present) were counted. Areas adjacent to the known gull nesting colony (OHRD Report Nos C79-246-K, 82-182-K and 84-47-K) were walked by three observers to locate nests outside the main colony.

The shoreline area in the vicinity of Bruce GS 'B' was also surveyed on the same dates for gull nesting activity. All gull activity observed was recorded.

2.2-4 Other Species

Records were kept of wildlife and wildlife signs observed within 1 km of BNPD by Biological Research crews. Species, numbers, activity and location were recorded whenever possible.

3.0 RESULTS AND DISCUSSION

3.1 Vegetation

BNPD lies within the Great Lakes - St. Lawrence Forest Region Huron - Ontario section (Rowe 1972) characterized by a mixed forest (Hosie 1979, Appendix C). Principal tree species within the region are red pine, eastern white pine, eastern hemlock and yellow birch in association with deciduous forest species (sugar maple, red maple, red oak, basswood and white elm) and boreal forest species (white spruce, black spruce, balsam fir, poplars and white birch). Intermixed are species with wider ranges (eastern white cedar, largetooth aspen, beech, butternut and white ash).

3.1-1 Site Vegetation

The forest vegetation present on the BNPD site is shown in Figure 3.1-1. The central portion of the BNPD site is composed primarily of deciduous trees of varying age. Semi-mature and mixed-aged conifers are predominant along the south boundary of the site beside Inverhuron Provincial Park. Semi-mature mixed forest stands extend north along the lake shoreline. A shallow marsh and wet meadow were present along the Lake Huron shoreline in Baie du Dore (OHRD Report 82-107-K). South of Baie du Dore along the BNPD North Access Road the forest vegetation is primarily uneven aged mixed forest with stands of semi-mature conifer and semi-mature mixed forest.

Thirty-four tree and shrub species were identified on the BNPD site (Appendix C). The majority of the species were native to the area (OMNR 1975). Wild crab apple, domestic apple and Russian olive were the only introduced species identified. None of the species are considered endangered. Four butternut trees, previously identified as a rare species for southern Bruce County (Hilts and Parker 1980, OMNR 1975) were identified along the transects (Figure 3.1-1).

Eastern white cedar was the dominant tree species within the conifer forest classification comprising 52% of the identified trees and shrubs (Table 3.1-1) and the only species present within all conifer plots. Balsam fir (25%), the second dominant conifer species, did not occur on all of the tallied plots. The number of species within the conifer plots ranged from a low of 9 (mature conifer) to a high of 14 (immature conifer). Site species diversity was generally lowest within the conifer forest stands ranging from 1.58 (mature conifer) to 1.96 (immature conifer).

Eastern white cedar was also the dominant tree species (26%) within the mixed forest stands and occurred on all plots. The lowest number of species (12) was found in the mature mixed stands while the greatest number of species was present in uneven aged plots (24). Species diversity ranged from 2.65 to 3.54 in the mature and uneven aged mixed forest stands, respectively.

Dogwoods were the dominant woody vegetation within immature , semi-mature and uneven aged deciduous plots. However, dogwoods were not tallied on any of the mature deciduous plots. White ash was the second dominant species (16%) and was present on 73% of the plots. The lowest deciduous species diversity (1.84) was determined for the semi-mature stands while the greatest diversity (3.48) was calculated for the uneven aged stands.

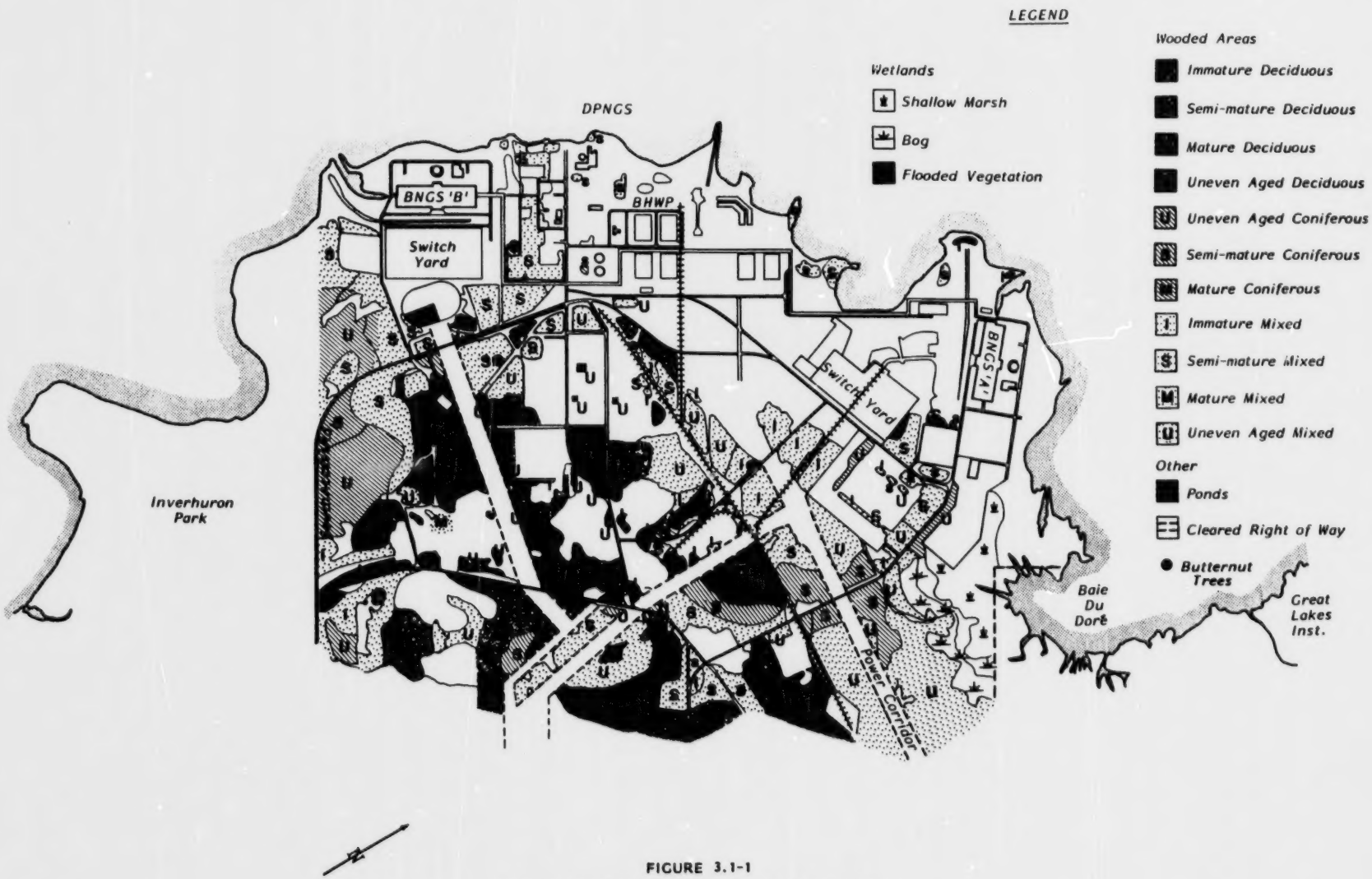


FIGURE 3.1-1
BNPD SITE VEGETATION CLASSIFICATION, 1984

200452 RD

TABLE 3.1-1

DOMINANT TREE AND SHRUB SPECIES BNPD, 1984

SPECIES	# OF STEMS		% OCCURRENCE
	CONIFER FOREST		
IMMATURE			
Balsam Fir	53		83
White Cedar	31		100
Trembling Ash	3		67
Mountain Maple	2		17
White Birch	2		83
Balsam Poplar	2		50
TOTALS - Species 14 Stems 593			
Diversity		1.96	
SEMI MATURE			
White Cedar	50		100
Balsam Fir	28		70
Dogwood	14		60
Tamarack	1		20
White Birch	1		20
TOTALS - Species 12 Stems 696			
Diversity		189	
MATURE			
White Cedar	65		100
Dogwood	23		40
White Birch	3		80
Tamarack	2		20
Balsam Poplar	2		20
TOTALS - Species 9 Stems 320			
Diversity		1.58	
UNEVEN			
White Cedar	60		100
Balsam Fir	20		50
Dogwood	11		38
Balsam Poplar	2		50
White Birch	1		63
Trembling Aspen	1		25
TOTALS - Species 12 Stems 556			
Diversity		1.85	

MIXED FOREST

IMMATURE			
White Cedar	22		100
Dogwood	19		75
White Ash	16		75
Staghorn Sumac	13		25
Balsam Fir	8		63
Trembling Aspen	7		63
TOTALS - Species 21 Stems 808			
Diversity		3.18	
SEMI MATURE			
Dogwood	32		75
White Cedar	21		100
Balsam Fir	13		50
Balsam Poplar	9		38
Choke Cherry	4		37
TOTALS - Species 18 Stems 850			
Diversity		3.01	
MATURE			
White Cedar	41		100
Mountain Maple	19		33
White Birch	13		100
Balsam Poplar	7		33
White Ash	5		67
TOTALS - Species 12 Stems 191			
Diversity		2.65	
UNEVEN			
White Cedar		22	100
Balsam Fir		17	83
Dogwood		16	67
Choke Cherry		8	33
Alder		5	13
White Ash		5	58
White Birch		5	58
TOTALS - Species 24 Stems 692			
Diversity		3.54	

DECIDUOUS FOREST

IMMATURE			
Dogwood	30		23
White Ash	22		92
Sugar Maple	10		54
Choke Cherry	8		62
Serviceberry	5		54
Black Cherry	4		38
TOTALS - Species 23 Stems 799			
Diversity		3.30	
SEMI MATURE			
Dogwood	69		50
Choke Cherry	11		67
Trembling Aspen	4		33
White Ash	4		50
Serviceberry	3		33
TOTALS - Species 16 Stems 686			
		1.84	
MATURE			
Sugar Maple	28		83
White Ash	21		50
Black Cherry	14		83
Beech	7		33
Hop-Hornbeam	6		33
White Birch	6		67
TOTALS - Species 14 Stems 101			
Diversity		3.10	
UNEVEN			
Dogwood	25		55
White Ash	18		100
Sugar maple	13		55
Willow	7		25
White Cedar	5		25
Ground Juniper			17
TOTALS - Species 20 Stems 559			
Diversity		3.48	

3.1-2 Vegetation Plots

Twelve permanent vegetation plots were established in the BNPD vicinity (Figure 2.1-2). Plot distribution within the forest categories, and species numbers are presented in Table 3.1-2. Plot species lists are presented in Appendices D and E. Sixteen tree and shrub species greater than 1 m in height were identified on the plots. Semi-mature and uneven aged mixed and mature deciduous plots contained the greatest numbers of species (n = 10). Only four species were identified on the uneven aged conifer plots. No shrubs or trees greater than 1 m in height were tallied within the disturbed area plot.

Thirty-seven herbaceous plant species were identified in the 1 m quadrats. In addition, some plants which could not be identified to species were identified to genus (*Carex, Rosa, Solidago* and *Viola*) or to family (Gramineae). The greatest number of herbaceous species (n = 17) was present on the uneven aged mixed plots and the fewest (n = 6) on the uneven aged conifer and deciduous plots. Grasses were present in 8 of the 12 vegetation plots.

None of the vascular plants identified are considered endangered. However 5 *Castilleja coccinea* (painted cup) rosettes were recorded in the disturbed area plot. This species is restricted in distribution in the Bruce area to the Lake Huron shoreline (Hilts and Parker 1980). The majority of the plants are native to the area (OMNR 1975). Only *Daucus carota* (wild carrot) and *Epipactus helleborine* (helleborine) are not native. Both of these species have been recorded previously as occurring in the area (OMNR 1975). Wild carrot was only found within the disturbed open field plot while helleborine was identified within 6 plots. *Aster vermineus, Gentiana crinita* (fringed gentian), and *Solidago erecta* (slender goldenrod) are the only species identified on the BNPD sites that were not identified in the Inverhuron Provincial Park plant species inventory (OMNR 1975).

Seven species of woody plants less than 1 m in height were identified within the 1 m quadrats. Speckled alder (plot 8) was the only species not identified within the larger 30 m by 30 m vegetation plots. It is a native species and is common locally (OMNR 1975).

3.1-3 Wetlands

Surface water levels have apparently increased at 2 locations on the BNPD site (Figure 3.1 -1). Beaver have created a 4.2 hectare pond beside the old beaver pond (0.8 hectares) south of the Indian Burial Ground. Vegetation species susceptible to high water tables within the flooded area are dying. Further woody vegetation loss to flooding and to beaver cutting can be expected to occur with the present beaver population.

Vegetation to the southwest of the North Access Guardhouse was also flooded. This flooding is probably due to construction activities. Surface water in this area has been backed up at the railway line resulting in increased vegetation loss. Drainage under or along the railway line may have to be improved to lower water levels within the area.

Off site, the ground water level has risen in the area bounded by the Tie Road on the west and the 4th Concession Road to the north. This area has a history of high water levels

Table 3.1-2

PERMANENT VEGETATION PLOT CLASSIFICATION
BNPD, 1984

Classification	Number of Plots	Plot Number	Tree/Shrub Species (30 x 30 m Plots)	Total Quadrat Species* (1 x 1 m Plots)	Herbaceous Species (1 x 1 m Plots)
Uneven aged conifer	2	1,6	4	7	6
Mature deciduous	3	2,4,10	10	16	12
Uneven aged deciduous	1	7	7	10	6
Immature mixed	1	8	6	9	8
Semi-mature mixed	1	5	10	8	8
Uneven aged mixed	2	9,11	10	20	17
Wetland	1	3	2	10	8
Disturbed area	1	12	0	12	12

* does not include grasses, sedges or mosses
includes trees and shrubs

with associated vegetation die off (17.9 hectares). However, the area of surface ground water and vegetation damage has increased (19.3 hectares). It is not known whether the higher water table in this area is associated with an increase in ground water levels or to the increased water levels on site southwest of the North Access Guardhouse.

Drainage along the Baie du Dore cottage road through the Douglas Point Swamp was improved after reconstruction of the cottage road. Prior to construction, water backed up along the east road bank during the spring and early summer (Ontario Hydro Research staff observations, 1979 - 1980). The installation of culverts during reconstruction increased water flow towards Baie du Dore.

Water levels were highest during the spring and early summer in most on-site permanent water impoundments. Levels subsided in late summer. The water levels in the ponds in the vicinity of the Indian Burial Ground decreased by approximately 0.5 m from May to August. The newly created beaver pond increased in depth by 0.05 m during this same period due to continued beaver activity.

3.2 Wildlife

The BNPD is situated within the Alleghanian or Transition Life Zone (Judd and Speirs 1964). This zone is represented by species of both boreal and deciduous forest zones.

3.2-1 Avian Species

Avian transect surveys were conducted during the weeks of July 2-6, September 17-21 and November 5-9. A total of 121 species were identified along the transects (Appendices F,G and H). Hilts and Parker (1980) listed 247 species occurring in the southern Bruce County area. None of the species observed at BNPD are on the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or Ontario Endangered Species Act lists. Four species observed on the site are listed in the Blue List (Tate 1986, Table 3.2-1). This list identifies species displaying non-cyclical population declines throughout North America but are not considered rare or endangered species.

Harris's sparrows (n = 2) reported during the September survey along transect G are rare to the area. Their normal migration route is through the prairie provinces to nesting areas in the Northwest Territories and northern Manitoba (Godfrey 1966). The sparrows were sighted by one observer and were not confirmed.

TABLE 3.2-1

BIRDS ON 1986 BLUE LIST OBSERVED ALONG TRANSECTS
BNPD, 1984

SPECIES	NUMBER
HORNED GREBE	8
SHARP-SHINNED HAWK	1
COMMON NIGHT HAWK	1
RUBY THROATED HUMMINGBIRD	2

Species diversity values along transects are presented in Table 3.2-2. The forest habitat associated with each transect is presented in Appendix I. Species diversity is generally highest in areas of high vegetative and topographic diversity (MacArthur and MacArthur 1961). The structural diversity of the vegetation is more important than the actual species diversity of plants. Bird species diversity should be highest in areas where there are well developed herb, shrub and canopy layers. Diversity should also be high along the borders of two varying habitats where vegetative diversity is high (Ambrose 1975, in Curtis and Ripley 1975). Variation in diversity among the transects at BNPD conforms reasonably well with the above discussion. Species diversity values ranged from 2.74 (Transect J, Baie du Dore) to 4.07 (Transect F, uneven aged deciduous and mixed) in July. The greatest site species diversity value (4.60) was also recorded in July. The overall September site species diversity value was 4.49 with transect diversity values ranging from 2.65 (Transect M, mature deciduous) to 3.75 (Transect I, immature mixed). The lowest site species diversity value was recorded in November (3.81) with individual transect diversity values ranging from 1.49 (Transect E, mature deciduous, uneven aged mixed) to 3.43 (Transect C, abandoned orchard, uneven and mature deciduous and semi mature mixed).

The greatest number of species was recorded along transect B in July (n = 29) and September (n = 27) (Table 3.2-2). A number of diverse habitats was incorporated into transect B. Transect B ran primarily through a recently disturbed area, an old orchard beside the beaver pond and associated flood area and the Tie Road ponds. The fewest

number of species was recorded along Transect D in September (n = 8) and November (n = 7). This transect ran entirely through a mature deciduous forest stand with limited secondary growth. The greatest number of species (n = 26) observed along the shoreline transects (J, K, L, P) was recorded along Transect J in September. Only 9 species were observed along Transect P when it was surveyed in November. However, the greatest number of sightings (n = 2025) on a transect was recorded along Transect P. The fewest number of sightings (n = 37) was recorded on Transect E in July.

Common merganser (n = 1353, 12.5%), herring gull (n = 1279, 11.9%) and ring-billed gull (n = 1034, 9.6%) were the dominant species observed along the avian transects (Table 3.2-3, Appendix H). All three water associated species are documented as breeding within the area (OMNR 1975). The dominant passerine species were cedar waxwing (n = 933, 8.6%) and black-capped chickadee (n = 792, 7.3%). Both of these species are also documented as local breeders.

TABLE 3.2-2

AVIAN SPECIES DIVERSITY ALONG TRANSECTS
BNPD, 1984

	JULY			SEPTEMBER			NOVEMBER		
TRANSECT	NUMBER OF SPECIES	NUMBER OF SIGHTINGS	DIVERSITY#	NUMBER OF SPECIES	NUMBER OF SIGHTINGS	DIVERSITY	NUMBER OF SPECIES	NUMBER OF SIGHTINGS	DIVERSITY
A	22	140	3.50	16	163	3.32	13	161	3.02
B	29	349	3.25	27	313	3.68	18	241	3.22
C	19	89	3.72	22	230	3.67	18	128	3.43
D	14	38	3.51	8	96	2.68	7	64	2.51
E	12	37	3.05	10	98	2.92	9	310	1.49
F	23	91	4.07	16	124	2.95	13	98	2.92
G	28	189	3.83	14	127	2.87	14	135	3.21
H	22	120	3.33	16	61	3.48	13	87	2.98
I	17	80	3.62	18	185	3.75	12	242	2.48
J	13	108	2.74	26	283	2.90	19	1361	2.30
K	16	68	3.49	15	141	3.33	22	942	3.03
L	18	140	3.00	14	140	3.26	15	251	3.08
M	14	99	3.21	16	200	2.65	13	281	2.17
N	21	77	3.62	25	179	3.42	11	82	3.05
O	16	115	2.99	13	120	2.72	13	73	3.32
P	-	-	-	-	-	-	9	2025	1.90
ALL TRANSECTS			4.60			4.49			3.81

* - UNIDENTIFIED BIRDS REMOVED
# - SHANNON - WEINER DIVERSITY INDEX

TABLE 3.2-3

DOMINANT IDENTIFIED AVIAN SPECIES
BNPD, 1984

SPECIES	NUMBER OF SIGHTINGS	% COMPOSITION
COMMON MERGANSER	1353	12.5
HERRING GULL	1279	11.9
RING-BILLED GULL	1034	9.6
CEDAR WAXWING	933	8.6
RED-BREASTED MERGANSER	847	7.8
BLACK-CAPPED CHICKADEE	792	7.3
BLUE JAY	419	3.9
PURPLE FINCH	419	3.9
ROCK DOVE	287	2.7
AMERICAN ROBIN	267	2.5
RED-WINGED BLACKBIRD	263	2.4

The dominant avian species along individual transects are presented in Table 3.2-4. Black-capped chickadee was the dominant species along 7 of the 16 transects. The common species along each transect were primarily local breeding species. However, the purple finches recorded along transects E (52.4 %) and M (29.1%) and the red-breasted mergansers along transect K (28.8%) do not breed within the area (OMNR 1975) and were only observed during migration.

Avian species observed by Ontario Hydro Research crews during aquatic activities are presented in Appendix J. The majority of birds was observed during the fall migration period. Red-breasted merganser (n = 238) and common merganser (n = 130) were the predominant species observed. Very few birds were recorded along the BNPD shoreline during the summer months. The summer sightings were primarily from Baie du Dore. The American bittern observed in Baie du Dore on August 22 was the only species that was not observed along the regular avian survey transects. It is a common breeding species (OMNR 1975) which is included on the Blue List (Tate 1986). Ring-billed gull numbers increased from 0 in May and July in the vicinity of the Bruce 'B' discharge to 30 and 50 birds on September 18 and 25 respectively.

Additional sightings of species not recorded along the avian transects are listed in Appendix K. Three great egrets were observed on the main Baie du Dore island during 1979. These birds are casual visitors to the area wandering to the north of their normal breeding range. An unconfirmed spring sighting of a snowy egret in Baie du Dore was reported by BNPD staff. This species is extremely rare in the area and an irregular visitor, although they have been reported on the Bruce Peninsula (James et al. 1976). Ontario Hydro Research crews reported sighting 50 to 100 black crowned night herons and 3 to 6 great blue herons feeding at night during the spring and summer of 1984 in the Bruce GS 'A' forebay area. Black crowned night herons had also previously been observed roosting in the vicinity of Underwood Creek during 1979. A bald eagle was observed in the vicinity of Baie du Dore for two days during the spring migration. This bird was observed by a number of BNPD staff. The bald eagle is on the Ontario Endangered Species Act and is considered to be a casual visitor within the southern Bruce County area (Hilts and Parker 1980). Two northern harriers were observed flying over Baie du Dore in 1984. Northern harrier is a Blue Listed species (Tate 1986) which breeds in the BNPD vicinity (Hilts and Parker 1980).

3.2-2 White-tailed Deer

The areas of white-tailed deer sightings are presented in Figure 3.2-1. The majority of actual deer observations (n = 18) were in the vicinity of the Siding Road. Corresponding aggregations of tracks and deer beds (n = 12) were also observed within this area. Eleven deer sightings and aggregations of deer tracks were reported to the south of the Central Services storage yard. Eight deer were observed in the vicinity of the Indian Burial Ground and the Tie Road pond and tracks were scattered over this entire area. Seven deer scrapes were observed in this area during the fall rut. The OMNR has designated the eastern portion of the BNPD site to be part of the Huron Fringe Deeryard (Figure 3.2-2, OMNR 1984). This deeryard extends northeast along Lake Huron from Inverhuron Provincial Park to just south of Port Elgin.

The fence line along the Tie Road was observed for possible sections permitting deer movement on or off the BNPD site. Potential locations existed where deer could pass under the fence (creek bed), through the fence (site access point gates) or clear the 2.7 m fence

TABLE 3.2-4

DOMINANT IDENTIFIED AVIAN SPECIES
BY TRANSECT
BNPD, 1984

SPECIES	NUMBER OF SIGHTINGS	% COMPOSITION	SPECIES	NUMBER OF SIGHTINGS	% COMPOSITION
	A			B	
BLACK CAPPED CHICKADEE	99	21.3	RED-WINGED BLACKBIRD	150	16.3
HERRING GULL	58	12.5	SNOW BUNTING	87	9.4
CEDAR WAXWING	46	9.9	ROCK DOVE	78	8.5
BLUE JAY	39	8.4	CEDAR WAXWING	67	7.3
GOLDEN-CROWNED KINGLET	32	6.9	TENNESSEE WARBLER	62	6.7
ROCK DOVE	29	6.3	KILLDEER	51	5.5
AMERICAN ROBIN	27	5.8	AMERICAN GOLDFINCH	46	5.0
	C			D	
BLACK-CAPPED CHICKADEE	67	15.0	BLACK-CAPPED CHICKADEE	36	18.2
ROCK DOVE	65	14.6	CEDAR WAXWING	28	14.1
BLUE JAY	44	9.9	BLUE JAY	25	12.6
AMERICAN GOLDFINCH	34	7.6	ROSE-BREASTED GROSBEAK	18	9.1
COMMON CROW	25	5.6	PURPLE FINCH	14	7.1
CEDAR WAXWING	21	4.7	DARK-EYED JUNCO	14	7.1
			SONG SPARROW	12	6.1
			HERRING GULL	10	5.1
	E			F	
PURPLE FINCH	233	52.4	BLACK-CAPPED CHICKADEE	54	17.3
CEDAR WAXWING	44	9.9	ROCK DOVE	46	14.7
BLACK-CAPPED CHICKADEE	42	9.4	BLUE JAY	27	8.6
BLUE JAY	21	4.7	TREE SPARROW	26	8.2
ROSE-BREASTED GROSBEAK	19	4.3	CEDAR WAXWING	22	7.0
COMMON REDPOLL	19	4.3	AMERICAN ROBIN	16	5.1

TABLE 3.2-4 (Cont'd)

DOMINANT IDENTIFIED AVIAN SPECIES
BY TRANSECT
BNPD, 1984

G			H		
CEDAR WAXWING	55	12.2	BLACK-CAPPED CHICKADEE	47	17.5
RING-BILLED GULL	50	11.1	RED-WINGED BLACKBIRD	38	14.2
BLACK-CAPPED CHICKADEE	41	9.1	CEDAR WAXWING	37	13.8
BLUE JAY	40	8.7	AMERICAN ROBIN	17	6.3
ROCK DOVE	38	8.4	BLUE JAY	14	5.2
DARK-EYED JUNCO	28	6.2			
CHIPPING SPARROW	27	6.0			
SNOW BUNTING	25	5.5			

I			J		
CEDAR WAXWING	146	28.8	RING-BILLED GULL	571	32.6
BLACK-CAPPED CHICKADEE	74	14.6	HERRING GULL	567	32.4
GOLDEN-CROWNED KINGLET	34	6.7	COMMON MERGANSER	244	13.9
BLUE JAY	29	5.7	RED-BREASTED MERGANSER	83	4.8
CHIPPING SPARROW	22	4.3	LESSER SCAUP	76	4.3

K			L		
RED-BREASTED MERGANSER	331	28.8	CEDAR WAXWING	124	23.4
CEDAR WAXWING	151	13.1	HERRING GULL	70	13.2
RING-BILLED GULL	115	10.0	BLACK-CAPPED CHICKADEE	61	11.5
HERRING GULL	103	8.9	RED-WINGED BLACKBIRD	45	8.5
COMMON MERGANSER	86	7.5	BLUE JAY	32	6.0
BONAPARTE'S GULL	80	7.0	AMERICAN ROBIN	32	6.0

M			N		
PURPLE FINCH	169	29.1	BLACK-CAPPED CHICKADEE	82	24.3
STARLING	100	17.2	CEDAR WAXWING	54	16.0
CEDAR WAXWING	81	14.0	BLUE JAY	31	9.2
BLACK-CAPPED CHICKADEE	61	10.5	AMERICAN GOLDFINCH	29	8.6
BLUE JAY	29	5.0	AMERICAN ROBIN	23	6.8

O			P		
BLACK-CAPPED CHICKADEE	68	22.1	COMMON MERGANSER	1018	47.7
CEDAR WAXWING	56	18.2	RED-BREASTED MERGANSER	433	20.3
BLUE JAY	24	7.8	HERRING GULL	360	16.9
AMERICAN ROBIN	24	7.8	RING-BILLED GULL	255	11.9
CHIPPING SPARROW	21	6.8	BUFFLEHEAD	44	2.1

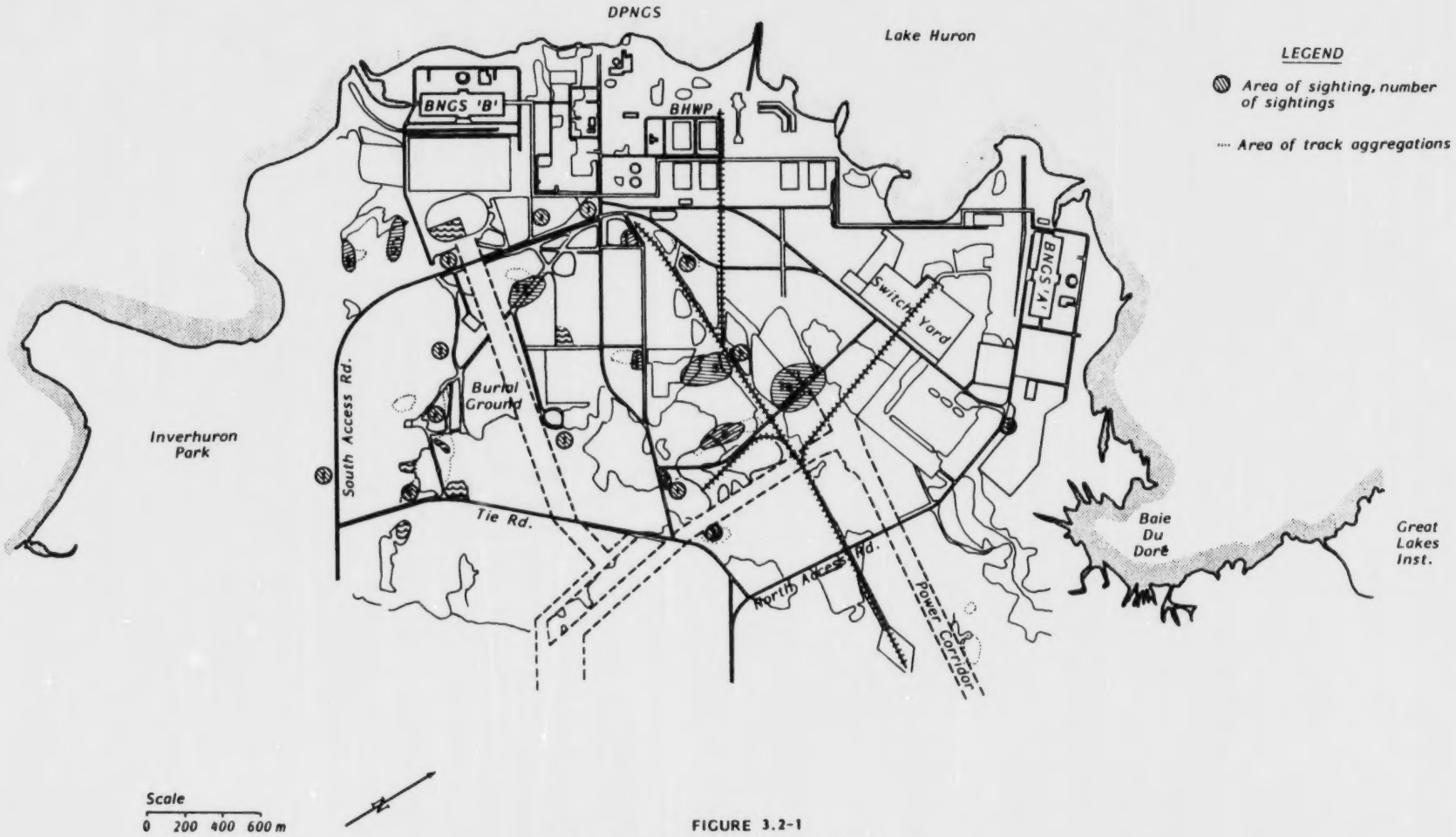


FIGURE 3.2-1

WHITE-TAILED DEER OBSERVATIONS BNPD, 1984

200456 RD

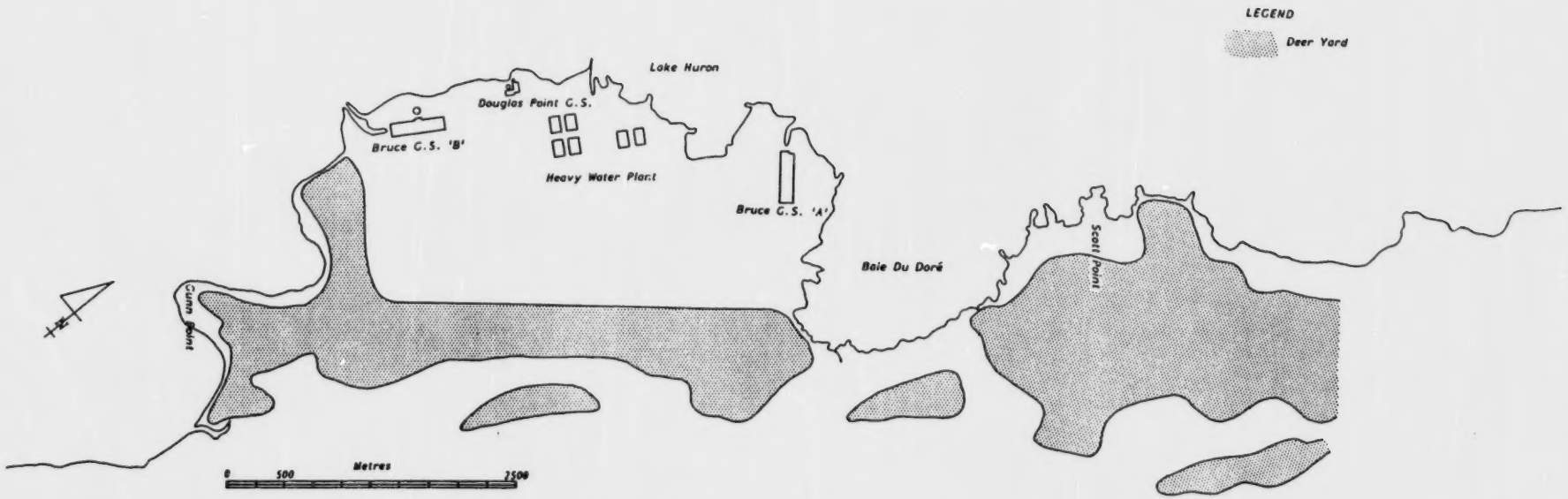


FIGURE 3.2-2
HURON FRINGE DEERYARD
WITHIN BNPD VICINITY

32538 RD

(Tie Road pond and orchard area). Inside the fenceline in the old orchard area the land is approximately 0.6 m higher than the lower fence border. This effectively reduces the height required to clear the fence. Deer have been observed to clear a 2.4 m fence topped with 3 strands of barbed wire (2.7 m) from both running and standing jumps (Rue 1981). Deer were also observed to jump a 2.3 m fence to leave a game preserve during a census drive (McCullough 1979).

BNPD site security reported 3 deer kills on the site during the survey period. Single kills occured in each of March, April and October. Road kills during the survey period were less than the average site road kill figure of 1 per month (Gowans 1983). The decrease in fatalities may be attributed to decreased traffic volume, driver awareness and observance of deer crossing road signs. No data is available to determine if the reduction in fatalities may be attributable to a reduction in the deer population.

Site security reported no hunting or poaching activity occurring on the site during 1984. However hunting pressure was heavy during the 1984 open season for white-tailed deer in the immediate vicinity of the BNPD site (16 hunters observed in 1 hour period).

3.2-3 Larid Distribution

The distribution of nesting ring-billed gull (*Larus delawarensis*) and herring gull (*Larus argentatus*) in the vicinity of the BNPD site has been documented from 1979 to 1981 (OHRD Reports Nos C79-246-K, 82-182-K and 83-96-K). These studies indicated the presence of a nesting colony of gulls on the rehabilitated landfill area between MacPherson Bay and the Bruce GS 'A' discharge channel. No other nesting locations were observed along the remaining shoreline of the BNPD site.

Gull nesting activity on the BNPD site in 1984 was limited to the Bruce GS 'A' colony (Figure 2.2-1). A total of 5 799 ring-billed gull and 311 herring gull nests were counted. The 1984 total of ring-billed gull nests was greater than the 4 673 nests counted in 1981 but less than the 5 811 nests recorded in 1980. The number of herring gull nests increased 9 % over the previous high total (285) recorded in 1980. Of these nests, 1033 ring-billed gull (18%) and 226 herring gull (73 %) nests were outside of the BNPD boundary fence. The majority of the herring gull nests located inside the boundary fence were located within 10 m of the fence (n = 81). Four herring gull nests were located to the north of the Bruce GS 'A' intake channel while single nests were located 20 and 30 m north of the main colony outside the perimeter fence. No nests were located further north of the colony. Shrub and tree species in a previously documented nesting area (OHRD Report No C79-246-K) near the mouth of the Bruce GS 'A' discharge may now have reached a height and density to discourage gull nesting activity.

Five herring gull and 129 ring-billed gull nests were located on the beach. All of the herring gull nests were located below the high wave zone fronting onto Lake Huron. These nests could be destroyed during a storm. The ring-billed gull nests were located on the MacPherson Bay side of a small headland and would be protected from wave action during most lake conditions.

Nesting substrate in the rehabilitated areas of the Bruce GS 'A' colony varied from hardpacked soil to boulder. The majority of nests were situated on hardpacked soil and gravel. The remainder of the nests were situated amongst pebble, cobble and boulders.

Nests on the beach were constructed primarily on gravel with a minority on sand and hardpacked soil.

Tree and shrub species are colonizing the ridge areas of the gull colony. Gull nests were located within these areas. However, overhanging branches did not allow the gulls free access to their nests. If the vegetation within this area becomes denser the area may be abandoned in the future.

No gull nesting activity was observed on the Bruce GS 'B' site. Groin extension construction was in progress in the vicinity of the Bruce GS 'B' discharge channel during the survey. The construction activity may have discouraged any gull nesting activity. When construction activity ceases, the potential for gull nesting will be increased. The presence of loafing gulls (n = 5) along the banks of the Bruce GS 'B' discharge during the nesting period is an indication that the area may be utilized for nesting in the future.

3.2-4 Other Species

Sixteen native and 2 introduced species (*Rattus norvegicus*, Norway rat and *Lepus europaeus*, European hare) were observed on site (Table 3.2-5). White-tailed deer and eastern chipmunks (*Tamias striatus*) were the common species reported on the site. The sightings were partially dependant upon species visibility and habits (audible and visual) and not upon actual population numbers. All species observed are common for Bruce and Grey counties. None are on the COSEWIC or Ontario Endangered Species Act endangered species lists. Other species associated with the Alleghanian Life Zone, but not sighted on the BNPD site, are listed in Appendix L.

Three reptile and five amphibian species were observed on or in the vicinity of the BNPD site (Table 3.2-6). None of the observed species are on the COSEWIC or Ontario Endangered Species lists. Spotted turtles were not observed during the survey but have been reported in Baie du Dore during previous surveys (OHRD Report 82-107-K). The absence of spotted turtle sightings is probably attributable to the sampling site location rather than to a population decrease.

4.0 SUMMARY AND CONCLUSIONS

1) The BNPD site contains deciduous, coniferous and mixed forest stands which are typical of the general area surrounding BNPD.

2) Herbaceous plant species identified in 1-m^2 plots are also typical of the area with no species that are considered rare or endangered.

3) Vegetation loss has occurred due to flooding from increased beaver activity in the area of an old beaver pond south of the Indian Burial Ground. Poor drainage around the railway line appears to have resulted in flooding and vegetation loss southwest of the North Access Guardhouse. Offsite, increased vegetation loss due to flooding has occurred in an area bounded by the Tie Road and 4th Concession Road. It is not known whether the increase in the water table in this area is associated with BNPD site construction activity. Improvements to the Baie du Dore cottage road through the Douglas Point Swamp appear to have reduced seasonal flooding of land east of the road.

TABLE 3.2-5

MAMMAL SIGHTINGS
BNPD, 1984

SPECIES	SCIENTIFIC NAME	SIGHTINGS
Common shrew	*Sorex cinerus*	2
Raccoon	*Procyon lotor*	6
Least weasel	*Mustela rixosa*	1
Mink	*Mustela vison*	1
Striped skunk	*Mephitis mephitis*	1
Red fox	*Vulpes fulva*	2
Feral dog	*Canis familiaris*	2
Groundhog	*Marmota monax*	3
Eastern chipmunk	*Tamias striatus*	22
Red squirrel	*Tamiasciurus hudsonicus*	7
Eastern gray squirrel	*Sciurus carolinensis*	7
Beaver	*Castor canadensis*	1
Muskrat	*Ondratra zibethica*	6
Norway rat	*Rattus norvegicus*	1
Porcupine	*Erethizon dorsatum*	4
Varying hare	*Lepus americanus*	11
European hare	*Lepus europaeus*	7
White-tailed deer	*Odocoileus virginianus*	67

Number of sampling days = 36

TABLE 3.2-6

REPTILE AND AMPHIBIAN SIGHTINGS
BNPD, 1984

SPECIES	SCIENTIFIC NAME	SIGHTINGS
Midland painted turtle	*Chrysemys picta marginata*	9
Eastern garter snake	*Thamnophis sirtalis sirtalis*	2
Eastern fox snake	*Elaphe vulpina glaydi*	1
Red-backed salamander	*Plethodon cinereus cinereus*	12
American toad	*Bufo americanus*	3
Gray treefrog	*Hyla versicolor*	3
Green frog	*Rana clamitans melanota*	1
Northern leopard frog	*Rana pipiens*	103

Number of sampling days = 36

4) During site visits 121 bird, 18 mammal, 3 reptile and 5 amphibian species were observed at BNPD. None of the species observed are on the COSEWIC or Ontario Endangered Species Act lists. Four bird species, however, are blue-listed, that is, they display non-cyclical population declines within North America but are not yet considered rare or endangered.

5) The gull colony adjacent to Bruce GS 'A' contained 5,799 ring-billed gull and 311 herring gull nests in 1984. The number of gulls nesting at BNPD has not changed substantially from previous counts in 1980 and 1981. No nesting was observed in other areas of the site.

6) White-tailed deer were observed throughout the vegetated areas of the site; however, fewer road kills were noted by security personnel than reported in previous years.

5.0 ACKNOWLEDGEMENTS

I wish to thank L. J. Onisto, O. B. Turczyn, H. Kowalyk and E. Checko for their participation in the field studies and data analysis. P. G. Atkins provided the data processing support.

Approved by:

D.J. Dodd
Acting Manager
Chemical Research Department

Submitted by:

R.W. Sheehan
Field Biologist
Biological Research Section

Reviewed by:

F.S. Spencer
Acting Supervising Biologist
Biological Research Section

RWS:djb

REFERENCES

Acres Consulting Services Limited in association with Underwood McLellan Ltd., 1981. Bruce Energy Centre Impact Statement Main Report, Bruce Energy Centre Development Corporation.

Ambrose, R.E., 1975. The Effect of Clearcutting on Bird and Small Mammal Populations. PhD Thesis, Univ. Tenn, Knoxville, Tenn.

Curtis, R.L. and T.H. Ripley, 1975. Water Managemant Practices and their Effect on Nongame Bird Habitat Values in a Deciduous Forest Community. USDA Forest Serv., Gen. Tech. Rep. WO-1: 128-141.

Evans, R. R., 1982. Environmental Mapping of Ontario Hydro Generating Station Sites. Ontario Hydro Environmental Studies and Assessments Department Report 82072.

Godfrey, W. E., 1966. The Birds of Canada. Natl. Mus. Can. Bull. 203. Ottawa. 428 p.

Gowans, W. L., 1983. BNPD Site Trip Report, September 20 - 21, 1983. Ontario Hydro Environmental Studies and Assessments Department, (File NK - 37 - 00100).

Hilts, S. G. and M. Parker, 1980. Environmentally Significant Areas of Southern Bruce County. University of Guelph Centre for Resource Development. Publication No. 101.

Hosie, R. C., 1979. Native Trees of Canada, Eighth edition. Fitzhenry and Whiteside Ltd.. 380 pp.

James, R. D., P. L. McLaren and J. C. Barlow, 1976. Annotated Checklist of the Birds of Ontario. Life Sciences Miscellaneous Publications Royal Ontario Museum, 75 pp.

Judd, W. W. and J. M. Speirs, 1964. A Naturalists Guide to Ontario. University of Toronto Press, 210 pp.

MacArthur, R.H. and J.W. MacArthur, 1961. On Bird Species Diversity. Ecology 42: 387-397.

McCullough, Dale R., 1979. The George Reserve Deer Herd. The University of Michigan Press. 271 pp.

Ontario Hydro Research Division Report No C79-246-K. 1979. Reproductive Success and Radionuclide Levels in Herring and Ring-Billed Gull Eggs at BNPD. G.T. Haymes.

Ontario Hydro Research Division Report No 82-107-K, 1982. BNPD Post-operational Survey Bruce GS 'A', Douglas Point GS, BHWP year 1 - 1979. J. D. Ellis and H. Balesic.

Ontario Hydro Research Division Report No 82-182-K. 1982. BNPD Postoperational Survey Year II, 1980. J.K. Kwik.

Ontario Hydro Research Division Report No 83-96-K. 1983. Bruce Nuclear Power Development (BNPD) Postoperational Aquatic Survey, Year III - 1981. W.E. Carey.

Ontario Hydro Research Division Report No. 84-47-K. Bruce Nuclear Power Development (BNPD) Postoperational Aquatic Studies Summary 1979-1981. W. E. Carey.

Ontario Ministry of Natural Resources, 1973. Conventional Signs and Forest Cover Legend. Timber Sales Branch.

Ontario Ministry of Natural Resources, 1975. An Annotated Checklist of the Vascular Plants of Inverhuron Provincial Park. Unpublished Report. J. W. Johnson and M. Parker.

Ontario Ministry of Natural Resources, 1981. Normal Yield Tables (metric) for Major Forest Species of Ontario. W. L. Plonski.

Ontario Ministry of Natural Resources, 1984. Habitat Assessment of Five Selected Areas of Winter Deer Range in Bruce County. S. J. Kerr and D. A. Perron.

Rowe, J. S., 1972. Forest Regions of Canada. Dept. Fisheries and Environment, Can. Forestry Service Publication No. 1300. Ottawa. 165p.

Rue, Leonard Lee, 1981. The Deer of North America. Times Mirror Magazine. 463 pp.

Tate, James, Jr, 1986. The Blue List for 1986. American Birds, Vol. 40, 227 - 236.

APPENDIX A

VEGETATION ALONG TRANSECTS
BNPD, 1984

A1 100 #

SPECIES	TYPE	I **	II	III	TOTAL
TREMBLING ASPEN	H	0	6	0	6
BALSAM POPLAR	H	0	3	4	7
YELLOW BIRCH	H	0	2	0	2
WHITE BIRCH	H	0	1	0	1
PIN CHERRY	H	0	1	0	1
EASTERN FLOWERING DOGW		0	0	0	342 *
RED ASH	H	0	2	7	9
BLACK ASH	H	1	5	3	9
TOTALS		1	20	14	35

HARDWOOD SEMI MATURE

A1 550

SPECIES	TYPE	I	II	III	TOTAL
WHITE PINE	C	0	0	2	2
HEMLOCK		0	0	0	1 *
BALSAM FIR	C	85	4	0	89
EASTERN WHITE CEDAR	C	0	0	2	2
TREMBLING ASPEN	H	1	1	0	2
WHITE BIRCH	H	0	0	2	2
EASTERN FLOWERING DOGW		0	0	0	3 *
RED ASH	H	1	0	3	4
TOTALS		87	5	9	101

CONIFER IMMATURE

A1 700

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	36	11	0	47
EASTERN WHITE CEDAR	C	0	0	7	7
TREMBLING ASPEN	H	0	6	0	6
BALSAM POPLAR	H	0	0	2	2
WHITE BIRCH	H	0	0	2	2
CHOKE CHERRY	H	0	1	0	1
EASTERN FLOWERING DOGW		0	0	0	5 *
TOTALS		36	18	11	65

CONIFER UNEVEN

A1 850

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	52	0	52
EASTERN WHITE CEDAR	C	0	1	9	10
TREMBLING ASPEN	H	0	4	0	4
WHITE BIRCH	H	0	0	3	3
EASTERN FLOWERING DOGW		0	0	0	3 *
TOTALS		0	57	12	69

CONIFER SEMI MATURE

A2 100

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	26	1	27
EASTERN WHITE CEDAR	C	0	0	2	2
TREMBLING ASPEN	H	0	3	4	7
WHITE BIRCH	H	0	1	2	3
CHOKE CHERRY	H	0	0	1	1
EASTERN FLOWERING DOGW		0	0	0	9 *
BLACK ASH	H	3	0	0	3
TOTALS		3	30	10	43

MIXED WOODS SEMI MATURE

A2 250

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	65	12	3	80
EASTERN WHITE CEDAR	C	0	0	8	8
TREMBLING ASPEN	H	3	1	1	5
WHITE BIRCH	H	0	0	5	5
BLACK ASH	H	2	1	0	3
TOTALS		70	14	17	101

CONIFER IMMATURE

APPENDIX A (Continued)

A2 400

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	48	3	0	51
EASTERN WHITE CEDAR	C	47	0	0	47
TREMBLING ASPEN	H	3	7	0	10
BALSAM POPLAR	H	0	1	0	1
WHITE BIRCH	H	0	2	0	2
MOUNTAIN MAPLE		0	0	0	14 *
EASTERN FLOWERING DOGW		0	0	0	2 *
WHITE ASH	H	4	0	0	4
RED ASH	H	0	0	2	2
BLACK ASH	H	2	0	1	3
TOTALS		104	13	3	120

CONIFER IMMATURE

A3 0-50

SPECIES	TYPE	I	II	III	TOTAL
BEECH	H	0	1	3	4
TOTALS		0	1	3	4

HARDWOOD MATURE

A3 50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	2	0	0	2
BLACK CHERRY	H	0	0	1	1
SUGAR MAPLE	H	3	3	7	13
TOTALS		5	3	8	16

HARDWOOD MATURE

A3 200

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	28	1	30
EASTERN WHITE CEDAR	C	0	2	0	2
TREMBLING ASPEN	H	0	0	1	1
HOPHORNBEAM	H	0	1	2	3
WHITE BIRCH	H	0	0	2	2
SUGAR MAPLE	H	1	11	5	17
WHITE ASH	H	0	3	0	3
TOTALS		2	45	11	58

MIXED WOODS SEMI MATURE

A3 350

SPECIES	TYPE	I	II	III	TOTAL
HEMLOCK		0	0	0	1 *
EASTERN WHITE CEDAR	C	0	0	4	4
BALSAM POPLAR	H	0	0	3	3
WHITE BIRCH	H	0	0	2	2
BLACK CHERRY	H	0	2	0	2
CHOKE CHERRY	H	0	0	1	1
SUGAR MAPLE	H	0	0	2	2
MOUNTAIN MAPLE		0	0	0	3 *
WHITE ASH	H	0	1	3	4
TOTALS		0	3	15	18

HARDWOOD MATURE

A3 300

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	16	0	1	17
EASTERN WHITE CEDAR	C	0	8	13	21
WHITE BIRCH	H	0	1	0	1
SUGAR MAPLE	H	0	3	14	17
TOTALS		16	12	28	56

MIXED WOODS UNEVEN

APPENDIX A (Continued)

A3 650

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	0	5	5
BALSAM POPLAR	H	0	0	2	2
WHITE BIRCH	H	0	0	2	2
BLACK CHERRY	H	0	1	0	1
TOTALS		0	1	9	10

MIXED WOODS MATURE

A4 100

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	3	1	5
EASTERN WHITE CEDAR	C	0	13	23	36
TOTALS		1	16	24	41

CONIFER SEMI MATURE

A4 250

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	31	12	43
BALSAM POPLAR	H	0	0	1	1
TOTALS		0	31	13	44

CONIFER SEMI MATURE

A4 400

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	0	12	12
TREMBLING ASPEN	H	0	1	0	1
YELLOW BIRCH	H	0	3	2	5
WHITE BIRCH	H	0	0	3	3
TOTALS		0	4	17	21

MIXED WOODS MATURE

A4 550

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	0	2	2
BLACK CHERRY	H	4	0	0	4
CHOKE CHERRY	H	0	11	0	11
RED ASH	H	0	0	1	1
TOTALS		4	11	3	18

HARDWOOD SEMI MATURE

A4 700

SPECIES	TYPE	I	II	III	TOTAL
HOPHORNBEAM	H	0	0	1	1
WHITE BIRCH	H	0	0	2	2
BEECH	H	0	0	2	2
BLACK CHERRY	H	0	0	9	9
SUGAR MAPLE	H	0	0	6	6
TOTALS		0	0	20	20

HARDWOOD MATURE

APPENDIX A (Continued)

AS 0-50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	3	0	0	3
HOPHORNBEAM	H	0	2	3	5
WHITE BIRCH	H	0	0	1	1
BEECH	H	0	0	1	1
BLACK CHERRY	H	0	0	1	1
SUGAR MAPLE	H	0	0	1	1
WHITE ASH	H	3	1	7	11
BLACK ASH	H	0	0	1	1
TOTALS		6	3	15	24

HARDWOOD MATURE

AS 150

SPECIES	TYPE	I	II	III	TOTAL
BUTTERNUT	H	0	0	1	1
BLACK CHERRY	H	0	0	1	1
SUGAR MAPLE	H	1	2	3	6
WHITE ASH	H	2	0	4	6
TOTALS		3	2	9	14

HARDWOOD MATURE

AS 300

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	9	1	10
TREMBLING ASPEN	H	0	2	0	2
YELLOW BIRCH	H	0	0	1	1
CHOKE CHERRY	H	0	5	0	5
SUGAR MAPLE	H	0	0	1	1
WHITE ASH	H	1	0	0	1
BLACK ASH	H	6	9	4	19
TOTALS		7	25	7	39

MIXED WOODS SEMI MATURE

AS 450

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	14	0	15
EASTERN WHITE CEDAR	C	0	1	19	20
TREMBLING ASPEN	H	1	1	0	2
YELLOW BIRCH	H	0	0	5	5
BLACK ASH	H	0	0	1	1
TOTALS		2	16	25	43

CONIFER SEMI MATURE

AS 600

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	27	4	0	31
EASTERN WHITE CEDAR	C	0	28	25	53
BALSAM POPLAR	H	0	0	2	2
TOTALS		27	32	27	86

CONIFER MIXED

AS 750

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	24	5	1	30
EASTERN WHITE CEDAR	C	0	13	6	19
BALSAM POPLAR	H	0	0	2	2
YELLOW BIRCH	H	0	1	0	1
WHITE BIRCH	H	0	0	1	1
BLACK ASH	H	6	0	0	6
TOTALS		30	19	10	59

CONIFER UNEVEN

APPENDIX A (Continued)

A6 0-50

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	10	31	41
EASTERN FLOWERING DOGW		0	0	0	24 *
TOTALS		0	10	31	41

CONIFER MATURE

A7 50

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	78	9	0	87
WILLOW SPP		0	0	0	6 *
BALSAM POPLAR	H	0	10	0	10
TOTALS		78	19	0	97

CONIFER IMMATURE

A7.5 100

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	2	0	2
GROUND JUNIPER		0	0	0	20 *
HAWTHORN SPP		0	0	0	1 *
WILD CRAB APPLE		0	0	0	4 *
BLACK CHERRY	H	3	0	0	3
CHOKE CHERRY	H	1	2	0	3
EASTERN FLOWERING DOGW		0	0	0	3 *
WHITE ASH	H	0	1	0	1
TOTALS		4	5	0	9

HARDWOOD UNEVEN

A7.5 250

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	1	0	1
GROUND JUNIPER		0	0	0	23 *
WILD CRAB APPLE		0	0	0	6 *
SERVICEBERRY		0	0	0	1 *
BLACK CHERRY	H	24	0	0	24
CHOKE CHERRY	H	29	0	0	29
WHITE ASH	H	1	0	0	1
TOTALS		54	1	0	55

HARDWOOD IMMATURE

A8 100

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	14	1	1	16
WILD CRAB APPLE		0	0	0	2 *
CHOKE CHERRY	H	0	4	1	5
CANADA PLUM		0	0	0	2 *
STAGHORN SUMAC		0	0	0	100 *
SUGAR MAPLE	H	5	0	0	5
TOTALS		19	5	2	26

MIXED WOODS IMMATURE

A8 250

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	0	0	1
TREMBLING ASPEN	H	0	0	1	1
WHITE BIRCH	H	0	1	1	2
BEECH	H	0	1	0	1
WHITE ELM	H	2	0	0	2
WILD CRAB APPLE		0	0	0	6 *
SERVICEBERRY		0	0	0	1 *
CHOKE CHERRY	H	7	0	1	8
SUGAR MAPLE	H	2	0	0	2
WHITE ASH	H	1	3	0	4
TOTALS		13	5	3	21

HARDWOOD IMMATURE

APPENDIX A (Continued)

AB 400

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	0	12	12
WILD CRAB APPLE		0	0	0	1 *
BLACK CHERRY	H	0	1	1	2
CHOKE CHERRY	H	1	55	0	56
SUGAR MAPLE	H	3	2	0	5
TOTALS		4	58	13	75

HARDWOOD SEMI MATURE

D4-1 0-50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	5	24	0	29
EASTERN WHITE CEDAR	C	0	23	0	23
BALSAM POPLAR	H	0	1	6	7
WHITE BIRCH	H	0	6	6	12
ALDER SPP		0	0	0	37 *
CHOKE CHERRY	H	42	1	0	43
EASTERN FLOWERING DOGW		0	0	0	18 *
WHITE ASH	H	11	0	0	11
TOTALS		58	55	12	125

MIXED WOODS UNEVEN

D4-2 0-50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	48	0	48
EASTERN WHITE CEDAR	C	0	81	0	81
BALSAM POPLAR	H	0	71	0	71
EASTERN FLOWERING DOGW		0	0	0	27 *
WHITE ASH	H	4	0	0	4
TOTALS		4	200	0	204

MIXED WOODS SEMI MATURE

D4-3 0-50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	57	0	57
EASTERN WHITE CEDAR	C	0	71	5	76
BALSAM POPLAR	H	0	0	3	3
WHITE BIRCH	H	0	2	4	6
CHOKE CHERRY	H	0	3	0	3
EASTERN FLOWERING DOGW		0	0	0	37 *
TOTALS		0	133	12	145

CONIFER SEMI MATURE

D5-2 0-50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	67	0	67
EASTERN WHITE CEDAR	C	0	20	3	23
CHOKE CHERRY	H	0	3	0	3
EASTERN FLOWERING DOGW		0	0	0	25 *
TOTALS		0	90	3	93

CONIFER SEMI MATURE

C7 50

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	18	25	43
BALSAM POPLAR	H	0	0	7	7
YELLOW BIRCH	H	0	2	0	2
WHITE BIRCH	H	0	2	2	4
BLACK CHERRY	H	1	0	0	1
EASTERN FLOWERING DOGW		0	0	0	50 *
TOTALS		1	22	34	57

CONIFER MATURE

C9 750

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	14	3	17
TREMBLING ASPEN	H	0	4	3	7
WHITE BIRCH	H	0	20	0	20
SUGAR MAPLE	H	1	1	0	2
EASTERN FLOWERING DOGW		0	0	0	74 *
WHITE ASH	H	0	2	0	2
TOTALS		1	41	6	48

MIXED WOODS SEMI MATURE

C9 900

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	49	3	52
BALSAM POPLAR	H	0	6	0	6
HOPHORNBEAM	H	2	5	0	7
APPLE SPP		0	0	0	5 *
CHOKE CHERRY	H	0	31	0	31
SUGAR MAPLE	H	1	4	0	5
EASTERN FLOWERING DOGW		0	0	0	5 *
WHITE ASH	H	1	2	0	3
TOTALS		4	97	3	104

MIXED WOODS SEMI MATURE

A9 100

SPECIES	TYPE	I	II	III	TOTAL
WILLOW SPP		0	0	0	36 *
BALSAM POPLAR	H	0	6	10	16
WHITE BIRCH	H	0	1	1	2
EASTERN FLOWERING DOGW		0	0	0	78 *
WHITE ASH	H	3	1	0	4
TOTALS		3	8	11	22

HARDWOOD UNEVEN

C8 50

SPECIES	TYPE	I	II	III	TOTAL
TAMARACK		0	0	0	7 *
EASTERN WHITE CEDAR	C	0	7	36	43
WHITE BIRCH	H	0	0	1	1
TOTALS		0	7	37	44

CONIFER MATURE

C8 200

SPECIES	TYPE	I	II	III	TOTAL
TAMARACK		0	0	0	1 *
EASTERN WHITE CEDAR	C	0	41	40	81
WHITE BIRCH	H	0	1	1	2
TOTALS		0	42	41	83

CONIFER UNEVEN

C9 450

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	46	7	0	53
EASTERN WHITE CEDAR	C	0	3	17	20
WHITE BIRCH	H	0	0	1	1
TOTALS		46	10	18	74

CONIFER IMMATURE

APPENDIX A (Continued)

A9 250

SPECIES	TYPE	I	II	III	TOTAL
HOPHORNBEAM	H	1	0	0	1
SUGAR MAPLE	H	27	0	0	27
WHITE ASH	H	75	1	1	77
TOTALS		103	1	1	105

HARDWOOD IMMATURE

A9 400

SPECIES	TYPE	I	II	III	TOTAL
WHITE ASH	H	1	2	3	6
TOTALS		1	2	3	6

HARDWOOD UNEVEN

C9 600

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	31	1	32
SUGAR MAPLE	H	1	0	0	1
EASTERN FLOWERING DOGW		0	0	0	11 *
WHITE ASH	H	0	2	0	2
TOTALS		1	33	1	35

CONIFER SEMI MATURE

D9 50

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	0	16	16
BALSAM POPLAR	H	0	10	1	11
WHITE BIRCH	H	0	0	6	6
EASTERN FLOWERING DOGW		0	0	0	5 *
WHITE ASH	H	0	0	2	2
TOTALS		0	10	25	35

MIXED WOODS MATURE

D9 200

SPECIES	TYPE	I	II	III	TOTAL
TAMARACK		0	0	0	1 *
BALSAM FIR	C	0	1	0	1
EASTERN WHITE CEDAR	C	0	20	14	34
YELLOW BIRCH	H	0	1	1	2
EASTERN FLOWERING DOGW		0	0	0	7 *
WHITE ASH	H	2	1	0	3
TOTALS		2	23	15	40

CONIFER SEMI MATURE

D10 150

SPECIES	TYPE	I	II	III	TOTAL
TAMARACK		0	0	0	9 *
EASTERN WHITE CEDAR	C	0	31	1	32
EASTERN FLOWERING DOGW		0	0	0	17 *
TOTALS		0	31	1	32

CONIFER SEMI MATURE

APPENDIX A (Continued)

C9 100

SPECIES	TYPE	I	II	III	TOTAL
HEMLOCK		0	0	0	3 *
EASTERN WHITE CEDAR	C	0	2	12	14
BALSAM POPLAR	H	0	0	1	1
YELLOW BIRCH	H	1	1	0	2
WHITE BIRCH	H	0	1	1	2
SUGAR MAPLE	H	1	1	0	2
EASTERN FLOWERING DOGW		0	0	0	1 *
WHITE ASH	H	0	3	0	3
TOTALS		2	8	14	24

MIXED WOODS UNEVEN

C9 250

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	0	1	1
EASTERN WHITE CEDAR	C	0	7	25	32
YELLOW BIRCH	H	0	2	1	3
WHITE BIRCH	H	0	1	1	2
WHITE ASH	H	0	1	0	1
TOTALS		0	11	28	39

CONIFER MATURE

C9 400

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	19	29	48
WHITE BIRCH	H	0	2	2	4
BLACK CHERRY	H	0	2	0	2
WHITE ASH	H	4	0	0	4
TOTALS		4	23	31	58

CONIFER MATURE

D10 300

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	20	21	41
WHITE BIRCH	H	0	0	1	1
TOTALS		0	20	22	42

CONIFER UNEVEN

D10 450

SPECIES	TYPE	I	II	III	TOTAL
TAMARACK		0	0	0	3 *
EASTERN WHITE CEDAR	C	0	25	17	42
BALSAM POPLAR	H	0	0	3	3
EASTERN FLOWERING DOGW		0	0	0	51 *
TOTALS		0	25	20	45

CONIFER UNEVEN

D10 600

SPECIES	TYPE	I	II	III	TOTAL
TAMARACK		0	0	0	1 *
BALSAM FIR	C	0	1	0	1
EASTERN WHITE CEDAR	C	0	21	21	42
TREMBLING ASPEN	H	0	0	1	1
WHITE BIRCH	H	0	0	2	2
CHOKE CHERRY	H	0	0	1	1
EASTERN FLOWERING DOGW		0	0	0	7 *
WHITE ASH	H	0	4	0	4
TOTALS		0	26	25	51

CONIFER UNEVEN

C10 50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	0	4	0	4
EASTERN WHITE CEDAR	C	0	0	15	15
WHITE BIRCH	H	0	1	3	4
CHOKE CHERRY	H	0	0	2	2
SUGAR MAPLE	H	0	1	0	1
WHITE ASH	H	0	3	0	3
TOTALS		0	9	20	29

MIXED WOODS MATURE

C10 250

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	0	0	1
EASTERN WHITE CEDAR	C	0	0	12	12
WHITE BIRCH	H	0	0	4	4
BLACK CHERRY	H	0	0	2	2
SUGAR MAPLE	H	0	2	3	5
MOUNTAIN MAPLE		0	0	0	17 *
WHITE ASH	H	0	2	0	2
TOTALS		1	4	21	26

MIXED WOODS MATURE

C10 400

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	0	0	1
EASTERN WHITE CEDAR	C	0	1	18	19
WHITE BIRCH	H	0	0	5	5
CHOKE CHERRY	H	0	1	0	1
MOUNTAIN MAPLE		0	0	0	20 *
WHITE ASH	H	1	0	1	2
TOTALS		2	2	24	28

MIXED WOODS MATURE

C10 600

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	0	25	25
BALSAM POPLAR	H	0	0	1	1
WHITE BIRCH	H	0	0	5	5
BLACK CHERRY	H	10	0	0	10
CHOKE CHERRY	H	0	15	0	15
EASTERN FLOWERING DOGW		0	0	0	20 *
WHITE ASH	H	38	7	1	46
BLACK ASH	H	0	1	0	1
TOTALS		48	23	32	103

HARDWOOD UNEVEN

C10 850

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	0	0	1
EASTERN WHITE CEDAR	C	0	1	8	9
WILLOW SPP		0	0	0	5 *
BALSAM POPLAR	H	8	0	0	8
YELLOW BIRCH	H	0	0	1	1
CHOKE CHERRY	H	0	3	1	4
SUGAR MAPLE	H	1	2	0	3
BASSWOOD	H	0	1	0	1
WHITE ASH	H	1	1	0	2
TOTALS		11	8	10	29

MIXED WOODS UNEVEN

C10 880

SPECIES	TYPE	I	II	III	TOTAL
WHITE BIRCH	H	0	0	1	1
TOTALS		0	0	1	1

HARDWOOD MATURE

APPENDIX A (Continued)

A10 0-50

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	38	6	44
TOTALS		0	38	6	44

CONIFER SEMI MATURE

A10 150

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	0	6	0	6
WILLOW SPP		0	0	0	20 *
WHITE BIRCH	H	0	3	0	3
PIN CHERRY	H	1	0	0	1
EASTERN FLOWERING DOGW		0	0	0	130 *
WHITE ASH	H	0	2	0	2
TOTALS		1	11	0	12

MIXED WOODS SEMI MATURE

A10 300

SPECIES	TYPE	I	II	III	TOTAL
APPLE SPP		0	0	0	3 *
EASTERN FLOWERING DOGW		0	0	0	27 *
WHITE ASH	H	7	0	0	7
TOTALS		7	0	0	7

HARDWOOD IMMATURE

A10 450

SPECIES	TYPE	I	II	III	TOTAL
EASTERN FLOWERING DOGW		0	0	0	200 *
WHITE ASH	H	33	3	0	36
TOTALS		33	3	0	36

HARDWOOD IMMATURE

A10 600

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	40	0	12	52
CHOKE CHERRY	H	0	10	0	10
EASTERN FLOWERING DOGW		0	0	0	100 *
WHITE ASH	H	120	0	1	121
TOTALS		160	10	13	183

MIXED WOODS IMMATURE

A10 750

SPECIES	TYPE	I	II	III	TOTAL
BALSAM POPLAR	H	0	1	0	1
EASTERN FLOWERING DOGW		0	0	0	115 *
WHITE ASH	H	0	3	0	3
TOTALS		0	4	0	4

HARDWOOD SEMI MATURE

APPENDIX A (Continued)

A10 900

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	4	25	17	46
APPLE SPP		0	0	0	1 *
WHITE ASH	H	10	0	0	10
TOTALS		14	25	17	56

CONIFER UNEVEN

B-8-N 0

SPECIES	TYPE	I	II	III	TOTAL
WILLOW SPP		0	0	0	1 *
BLACK CHERRY	H	0	1	0	1
CHOKE CHERRY	H	11	0	0	11
STAGHORN SUMAC		0	0	0	5 *
EASTERN FLOWERING DOGW		0	0	0	6 *
WHITE ASH	H	1	1	0	2
RUSSIAN OLIVE		0	0	0	1 *
TOTALS		12	2	0	14

HARDWOOD IMMATURE

B-8-N 100

SPECIES	TYPE	I	II	III	TOTAL
SERVICEBERRY		0	0	0	13 *
CHOKE CHERRY	H	0	3	3	6
SUGAR MAPLE	H	0	1	0	1
WHITE ASH	H	2	5	0	7
TOTALS		2	9	3	14

HARDWOOD SEMI MATURE

B-8-N 250

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	1	0	0	1
SERVICEBERRY		0	0	0	11 *
CHOKE CHERRY	H	1	0	0	1
WHITE ASH	H	10	4	0	14
TOTALS		12	4	0	16

HARDWOOD IMMATURE

B-8-N 400

SPECIES	TYPE	I	II	III	TOTAL
HOPHORNBEAM	H	1	1	0	2
SERVICEBERRY		0	0	0	19 *
CHOKE CHERRY	H	3	1	0	4
SUGAR MAPLE	H	1	0	0	1
WHITE ASH	H	9	7	0	16
TOTALS		14	9	0	23

HARDWOOD UNEVEN

B-7-S 30

SPECIES	TYPE	I	II	III	TOTAL
WILLOW SPP		0	0	0	4 *
EASTERN FLOWERING DOGW		0	0	0	1 *
TOTALS		0	0	0	0

APPENDIX A (Continued)

B-7-S 300

SPECIES	TYPE	I	II	III	TOTAL
GROUND JUNIPER		0	0	0	1 *
CHOKE CHERRY	H	1	0	0	1
SUGAR MAPLE	H	12	1	0	13
TOTALS		13	1	0	14

HARDWOOD IMMATURE

B-7-S 450

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	2	0	0	2
HOPHORNBEAM	H	0	2	0	2
SERVICEBERRY		0	0	0	4 *
BLACK CHERRY	H	2	0	0	2
SUGAR MAPLE	H	10	0	0	10
WHITE ASH	H	1	4	0	5
TOTALS		15	6	0	21

HARDWOOD IMMATURE

B-7-S 600

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	1	0	0	1
GROUND JUNIPER		0	0	0	1 *
HOPHORNBEAM	H	8	3	0	11
SERVICEBERRY		0	0	0	3 *
TOTALS		9	3	0	12

HARDWOOD IMMATURE

B-7-N 50

SPECIES	TYPE	I	II	III	TOTAL
WILLOW SPP		0	0	0	2 *
BALSAM POPLAR	H	1	3	0	4
STAGHORN SUMAC		0	0	0	4 *
EASTERN FLOWERING DOGW		0	0	0	8 *
WHITE ASH	H	2	2	0	4
TOTALS		3	5	0	8

HARDWOOD UNEVEN

B-6-S 50

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	1	1	0	2
GROUND JUNIPER		0	0	0	5 *
WILLOW SPP		0	0	0	1 *
HAWTHORN SPP		0	0	0	1 *
BLACK CHERRY	H	1	2	1	4
STAGHORN SUMAC		0	0	0	7 *
SUGAR MAPLE	H	13	8	0	21
WHITE ASH	H	1	1	0	2
BLACK ASH	H	0	1	0	1
TOTALS		16	13	1	30

HARDWOOD UNEVEN

B-6-S 200

SPECIES	TYPE	I	II	III	TOTAL
HOPHORNBEAM	H	0	3	1	4
BEECH	H	3	4	1	8
SERVICEBERRY		0	0	0	1 *
BLACK CHERRY	H	0	1	2	3
CHOKE CHERRY	H	1	0	0	1
SUGAR MAPLE	H	1	4	5	10
WHITE ASH	H	0	2	2	4
TOTALS		5	14	11	30

HARDWOOD UNEVEN

APPENDIX A (Continued)

B-5-S 100

SPECIES	TYPE	I	II	III	TOTAL
EASTERN WHITE CEDAR	C	7	3	1	11
WHITE BIRCH	H	1	1	0	2
SERVICEBERRY		0	0	0	7 *
BLACK CHERRY	H	2	0	0	2
CHOKE CHERRY	H	3	4	0	7
STAGHORN SUMAC		0	0	0	1 *
SUGAR MAPLE	H	8	0	2	10
MOUNTAIN MAPLE		0	0	0	1 *
WHITE ASH	H	2	0	0	2
TOTALS		23	8	3	34

MIXED WOODS IMMATURE

B-5-S 250

SPECIES	TYPE	I	II	III	TOTAL
HOPHORNBEAM	H	1	0	1	2
WHITE BIRCH	H	8	2	0	10
SERVICEBERRY		0	0	0	14 *
BLACK CHERRY	H	1	0	0	1
CHOKE CHERRY	H	4	1	0	5
SUGAR MAPLE	H	16	2	4	22
MOUNTAIN MAPLE		0	0	0	1 *
WHITE ASH	H	13	2	0	15
TOTALS		43	7	5	55

HARDWOOD IMMATURE

B-4-S 50

SPECIES	TYPE	I	II	III	TOTAL
TREMBLING ASPEN	H	1	0	0	1
HOPHORNBEAM	H	1	3	0	4
WHITE BIRCH	H	4	0	2	6
SERVICEBERRY		0	0	0	8 *
BLACK CHERRY	H	4	0	0	4
CHOKE CHERRY	H	4	0	0	4
SUGAR MAPLE	H	2	2	1	5
WHITE ASH	H	4	0	1	5
TOTALS		20	5	4	29

HARDWOOD IMMATURE

B-3-S 1001

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	3	0	0	3
BALSAM POPLAR	H	1	0	0	1
HOPHORNBEAM	H	1	1	0	2
WHITE BIRCH	H	0	0	1	1
BEECH	H	0	1	2	3
SUGAR MAPLE	H	6	9	2	17
WHITE ASH	H	2	1	4	7
TOTALS		13	12	9	34

HARDWOOD UNEVEN

B-2-S 0

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	7	5	0	12
EASTERN WHITE CEDAR	C	1	2	2	5
WILLOW SPP		0	0	0	5 *
TREMBLING ASPEN	H	0	0	2	2
HOPHORNBEAM	H	1	0	0	1
WHITE BIRCH	H	0	2	0	2
RED MAPLE	H	1	1	3	5
EASTERN FLOWERING DOGW		0	0	0	8 *
WHITE ASH	H	2	2	0	4
RED ASH	H	0	1	2	3
BLACK ASH	H	1	0	0	1
TOTALS		13	13	9	35

MIXED WOODS UNEVEN

B-2-S 150

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	2	1	0	3
EASTERN WHITE CEDAR	C	1	6	2	9
WILLOW SPP		0	0	0	4 *
TREMBLING ASPEN	H	1	4	0	5
BALSAM POPLAR	H	0	1	0	1
BUTTERNUT	H	0	1	0	1
WHITE BIRCH	H	1	0	0	1
MOUNTAIN MAPLE		0	0	0	1 *
EASTERN FLOWERING DOGW		0	0	0	9 *
RED ASH	H	3	4	8	15
BLACK ASH	H	1	2	0	3
TOTALS		9	19	10	38

MIXED WOODS SEMI MATURE

APPENDIX A (Continued)

B-1-S (A) 0

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	3	5	0	8
TREMBLING ASPEN	H	2	15	6	23
WHITE BIRCH	H	1	0	0	1
SERVICEBERRY		0	0	0	4 *
CHOKE CHERRY	H	0	1	1	2
EASTERN FLOWERING DOGW		0	0	0	17 *
WHITE ASH	H	8	3	3	14
TOTALS		14	24	10	48

HARDWOOD SEMI MATURE

B-1-S (B) 0

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	12	6	0	18
EASTERN WHITE CEDAR	C	0	0	1	1
WILLOW SPP		0	0	0	1 *
TREMBLING ASPEN	H	14	3	0	17
BALSAM POPLAR	H	5	0	0	5
WHITE BIRCH	H	0	1	1	2
SERVICEBERRY		0	0	0	1 *
EASTERN FLOWERING DOGW		0	0	0	9 *
WHITE ASH	H	0	1	0	1
TOTALS		31	11	2	44

MIXED WOODS IMMATURE

B-1-S (C) 30

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	4	1	0	5
EASTERN WHITE CEDAR	C	4	2	11	17
TREMBLING ASPEN	H	1	1	2	4
WHITE BIRCH	H	0	1	0	1
CHOKE CHERRY	H	1	0	1	2
EASTERN FLOWERING DOGW		0	0	0	1 *
WHITE ASH	H	5	0	0	5
TOTALS		15	5	14	34

MIXED WOODS UNEVEN

B-5-MID 0

SPECIES	TYPE	I	II	III	TOTAL
BALSAM POPLAR	H	6	0	0	6
HOPHORNBEAM	H	2	5	0	7
WHITE BIRCH	H	1	1	0	2
BEECH	H	6	2	1	9
CHOKE CHERRY	H	0	0	1	1
SUGAR MAPLE	H	0	1	2	3
WHITE ASH	H	1	0	0	1
TOTALS		16	9	4	29

HARDWOOD IMMATURE

B-4-MID 100

SPECIES	TYPE	I	II	III	TOTAL
HOPHORNBEAM	H	0	1	0	1
YELLOW BIRCH	H	3	0	0	3
BEECH	H	1	1	0	2
BLACK CHERRY	H	2	0	0	2
SUGAR MAPLE	H	0	1	5	6
WHITE ASH	H	4	0	0	4
TOTALS		10	3	5	18

HARDWOOD UNEVEN

B-6-GRASS HILL 100

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	3	0	0	3
EASTERN WHITE CEDAR	C	37	4	3	44
WILLOW SPP		0	0	0	1 *
TREMBLING ASPEN	H	6	2	0	8
BALSAM POPLAR	H	1	0	0	1
WHITE BIRCH	H	0	3	0	3
SERVICEBERRY		0	0	0	4 *
CHOKE CHERRY	H	1	0	0	1
EASTERN FLOWERING DOGW		0	0	0	4 *
RED ASH	H	2	0	0	2
BLACK ASH	H	1	0	0	1
TOTALS		51	9	3	63

MIXED WOODS IMMATURE

B-4-N 0

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	19	0	1	20
EASTERN WHITE CEDAR	C	0	0	4	4
TREMBLING ASPEN	H	4	2	0	6
BALSAM POPLAR	H	2	0	0	2
LARGETOOTH ASPEN	H	0	1	0	1
WHITE BIRCH	H	0	0	2	2
SERVICEBERRY		0	0	0	2 *
CHOKE CHERRY	H	0	1	5	6
EASTERN FLOWERING DOGW		0	0	0	4 *
RED ASH	H	3	0	8	11
TOTALS		28	4	20	52

MIXED WOODS UNEVEN

B-4-N 150

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	39	3	0	42
EASTERN WHITE CEDAR	C	12	4	2	18
TREMBLING ASPEN	H	1	0	0	1
BALSAM POPLAR	H	2	0	0	2
WHITE BIRCH	H	0	0	3	3
SUGAR MAPLE	H	0	0	1	1
EASTERN FLOWERING DOGW		0	0	0	2 *
WHITE ASH	H	1	1	0	2
RED ASH	H	3	0	0	3
TOTALS		58	8	6	72

CONIFER IMMATURE

B-3-N 0

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	11	0	0	11
EASTERN WHITE CEDAR	C	1	0	2	3
TREMBLING ASPEN	H	1	3	0	4
BALSAM POPLAR	H	7	4	2	13
LARGETOOTH ASPEN	H	2	7	0	9
HOPHORNBEAM	H	1	0	0	1
WHITE BIRCH	H	0	1	2	3
WHITE ELM	H	0	1	0	1
BLACK CHERRY	H	0	1	0	1
STAGHORN SUMAC		0	0	0	4 *
WHITE ASH	H	7	0	0	7
RED ASH	H	2	1	2	5
TOTALS		32	18	8	58

HARDWOOD IMMATURE

B-2-N 50

SPECIES	TYPE	I	II	III	TOTAL
BALSAM FIR	C	3	0	0	3
EASTERN WHITE CEDAR	C	4	0	1	5
WILLOW SPP		0	0	0	2 *
WHITE BIRCH	H	0	1	1	2
BLACK CHERRY	H	0	5	0	5
STAGHORN SUMAC		0	0	0	2 *
SUGAR MAPLE	H	0	0	1	1
EASTERN FLOWERING DOGW		0	0	0	10 *
COMMON ELDER		0	0	0	4 *
TOTALS		7	6	3	16

MIXED WOODS UNEVEN

LEGEND

\# A-Vegetation Survey Zone

1-Transect

100-Distance from starting point on transect

**-Age Classification

1-immature

11-semi mature

111-mature

*-not used for age/site classification

APPENDIX B

PERMANENT VEGETATION PLOT LOCATIONS
BNPD, 1984

ALL COMPASS COURSES ARE UNCORRECTED FOR DEVATION

PLOT 1

300' COURSE FROM NO TRESPASSING SIGN NEAR DYNAMITE STORAGE CONTAINERS; IN 60 M; QUADRANT 1 STARTED FROM SW TO SE CORNER

PLOT 2

220' COURSE FROM ROCK OPPOSITE ENTRY POINT MARKED WITH RED PAINT; IN 95 M; PLOT IS IN PASSED AN OLD CUT ROAD; QUADRANT 1 STARTED FROM SE TO NE CORNER

PLOT 3

BAIE DU DORE PLOT - LINE UP 4 BROWN CHIMNEYS ON THE BRUCE A REACTOR BUILDING (NORTH SIDE); ON EAST SIDE OF THE CREEK IS A 1 M HIGH GRAVEL RIDGE APPROX. 3 M WIDE; THE SOUTH WEST STAKE OF THE PLOT IS RIGHT ON THE RIDGE

PLOT 4

10' COURSE 70 M FROM DYNAMITE SHED ROAD GATE; IN 100 M; QUADRANT 1 STARTED FROM SE TO NE CORNER

PLOT 5

70' COURSE FROM MARKED HYDRO POLE; IN 3 M; QUADRANT 1 STARTED FROM SW TO SE CORNER

PLOT 6

240' COURSE IN; 206 M IN FROM MAIN ROAD ALONG CUT ROAD; IN 46 M FROM MARKED TREES (THICK COVER); QUADRANT 1 STARTED FROM NE TO NW CORNER

PLOT 7

30' COURSE IN FROM ROAD; 41 M IN; QUADRANT 1 STARTED FROM NW TO NE CORNER

PLOT 8

NO COMPASS COURSE DUE TO POWER LINE INTERFERENCE; TREES MARKED TO CUT ROAD; PLOT IS 8 M IN FROM CUT ROAD; PLOT ENTRY LOCATION IS 69 M IN FROM THE SIDING ROAD; QUADRANT 1 STARTED FROM NW TO SW CORNER

PLOT 9

COMPASS COURSE OFF DUE TO POWER LINE; PLOT ACCESS POINT IS OPPOSITE THE THIRD HYDRO POLE IN FROM THE RAILROAD TRACKS; ROUTE IS MARKED WITH RED PAINT ALL OF THE WAY IN 73 M FROM THE THIRD HYDRO POLE; QUADRANT 1 STARTED FROM NE TO NW CORNER

PLOT 10

203' IN; 20 M IN FROM ROAD; QUADRANT 1 STARTED FROM SE TO NE

PLOT 11

170' COURSE IN FROM STORAGE YARD (APPROX 30 M EAST OF CIRCULAR TIN SHED IN STORAGE YARD; LOCATION OF ENTRY MARKED WITH PAINTED STONES IN CIRCULAR PILE ON THE FAR SIDE OF THE DITCH; IN 81 M; QUADRANT 1 STARTED FROM NE TO NW CORNER

PLOT 12

190' COURSE IN; 23 M IN FROM END OF ROAD;

APPENDIX C

VASCULAR PLANT SPECIES
BNPD, 1984

HERBACEOUS PLANT SPECIES

Achillea millefolium	Yarrow
Actaea pachypoda	White baneberry
Agrimonia gryposepala	Agrimony
Anemone cylindrica	Long-fruited anemone
Aralia nudicaulis	Wild sarsaparilla
Arisaema atrorubens	Jack-in-the-pulpit
Aster ericoides	Many-flowered aster
Aster lateriflorus	Calico aster
Aster macrophyllus	Large-leaved aster
Aster vimineus	Aster
Carex spp	Sedges
Castilleja coccinea	Painted cup
Daucus carota	Wild carrot
Epilobium coloratum	Purple-leaved willow herb
Epipactus helleborine	Helleborine
Fragaria virginiana	Wild strawberry
Graminae	Grasses
Gentiana crinita	Fringed gentian
Hypericum perforatum	Common St. John's-wort
Hypericum spp (prolificitum)	St. John's-wort
Iris versicolor	Larger blue flag
Maianthemum canadense	Wild lily of the valley
Mitchella repens	Partridgeberry
Pedicularis canadensis	Wood betony
Polygala paucifolia	Fringed polygala
Potentilla fruiticosa	Shrubby cinquefoil
Prunella vulgaris	Selfheal
Pteridium aquilinium	Bracken fern
Rhus radicans	Poison ivy
Ribes cynosbati	Prickly gooseberry
Rosa spp	Rose spp
Rubus spp	Raspberry
Rubus pubescens	Dwarf raspberry
Shepherdia canadensis	Buffalo berry
Solidago spp	Goldenrods
Solidago canadensis	Canada goldenrod
Solidago erecta	Slender goldenrod
Solidago graminifolia	Lance-leaved goldenrod
Solidago nemoralis	Grey goldenrod
Tiarella cordifolia	Foamflower
Trientalis borealis	Starflower
Veronica officinalis	Common speedwell
Viola spp	Violets

APPENDIX C (Continued)

WOODY PLANT SPECIES

Pinus strobus	White pine
Larix laricina	Tamarack
Tsuga canadensis	Hemlock
Abies balsamea	Balsam Fir
Thuja occidentalis	Eastern white cedar
Juniperus spp	Ground juniper
Salix spp	Willow spp
Populus tremuloides	Trembling aspen
Populus balsamifera	Balsam poplar
Populus grandidentata	Largetooth aspen
Juglans cinerea	Butternut
Carya ovata	Shagbark hickory
Ostrya virginiana	Hop-hornbeam
Betula alleghaniensis	Yellow birch
Betula papyrifera	White birch
Alnus spp	Alder spp
Alnus rugosa	Speckled Alder
Fagus grandifolia	Beech
Ulmus americana	White elm
Crataegus spp	Hawthorn spp
Pyrus spp	Wild crab applie
Pyrus malus	Domestic apple
Amelanchier laevis	Smooth serviceberry
Prunus serotina	Black cherry
Prunus virginiana	Choke cherry
Prunus pensylvanica	Pin cherry
Prunus nigra	Canada Plum
Rhus typhina	Staghorn sumac
Acer saccharum	Sugar maple
Acer rubrum	Red maple
Acer spicatum	Mountain apple
Tilia americana	Basswood
Cornus florida	Eastern flowering dogwood
Cornus alternifolia	Alternate-leaved dogwood
Cornus stolonifera	Red Osier dogwood
Cornus rugosa	Round-leaved dogwood
Fraxinus americana	White ash
Fraxinus pensylvanica	Red ash
Fraxinus nigra	Black ash
Viburnum lentago	Nannyberry

APPENDIX D

TREE AND SHRUB SPECIES
BNPD VEGETATION PLOTS, 1984

SPECIES	QUADRANT 1	2	3	4	TOTAL	%
PLOT 1 UNEVEN DECIDUOUS						
WHITE CEDAR	8	15	8	4	35	92
WHITE BIRCH	1	1	1	0	3	8
TOTAL	9	16	9	4	38	
%	24	42	24	11		
PLOT 2 UNEVEN DECIDUOUS						
SUGAR MAPLE	3	5	7	6	21	57
SHAGBARK HICKORY	2	1	0	0	3	8
WHITE ASH	2	0	0	3	5	14
WHITE BIRCH	0	1	0	0	1	3
CHOKE CHERRY	0	2	1	0	3	8
BALSAM FIR	0	0	2	1	3	8
TREMBLING ASPEN	0	0	0	1	1	3
TOTAL	7	9	10	11	37	
%	19	24	27	30		
PLOT 3 BAIE DU DORE						
ROUND-LEAVED DOGWOOD	8	0	0	1	9	
WHITE CEDAR	0	0	0	1	1	
TOTAL	8	0	0	20		
%	80	0	0	20		
PLOT 4 MATURE MIXED						
BLACK CHERRY	1	1	0	0	2	13
SUGAR MAPLE	4	1	2	4	11	73
WHITE ASH	0	0	2	0	2	13
TOTAL	5	2	4	4	15	
%	33	13	27	27		

PLOT 5 SEMI MATURE MIXED

WHITE ASH	3	5	1	1	10	22
WHITE BIRCH	2	2	1	4	9	20
RED OSIER DOGWOOD	2	3	1	4	10	22
TREMBLING ASPEN	2	1	1	1	5	11
SUGAR MAPLE	1	0	0	0	1	2
WHITE CEDAR	1	0	0	0	1	2
BLACK ASH	0	1	0	0	1	2
BLACK CHERRY	0	1	0	0	1	2
BALSAM FIR	0	3	1	0	4	9
CHOKE CHERRY	0	0	1	2	3	7
TOTAL	11	16	6	12	45	
%	24	36	13	27		

PLOT 6 UNEVEN AGED MIXED

WHITE CEDAR	2	6	5	4	17	22
WHITE BIRCH	1	1	0	2	4	5
BALSAM FIR	9	7	29	20	55	71
RED PINE	0	0	1	0	1	1
TOTAL	12	14	25	26	77	
%	16	18	32	34		

PLOT 7 MATURE MIXED

WHITE BIRCH	1	0	0	0	1	5
SUGAR MAPLE	4	2	0	0	6	30
BLACK CHERRY	1	0	0	1	2	10
WHITE ASH	1	1	0	0	2	10
SMOOTH SERVICEBERRY	0	2	0	1	3	15
ROUND-LEAVED DOGWOOD	0	0	2	1	3	15
BASSWOOD	0	0	0	3	3	15
TOTAL	7	5	2	6	20	
%	35	25	10	30		

PLOT 8 IMMATURE MIXED

WHITE ASH	11	0	0	2	13	17
WHITE CEDAR	8	8	6	3	25	32
BALSAM FIR	10	7	7	5	29	38
WHITE BIRCH	1	2	3	1	7	9
TREMBLING ASPEN	0	1	0	1	2	3
SMOOTH SERVICEBERRY	0	0	1	0	1	1
TOTAL	30	18	17	12	77	
%	39	23	22	16		

PLOT 9 SEMIMATURE DECIDUOUS

BALSMA FIR	8	9	9	15	41	72
WHITE ASH	1	0	0	1	2	4
BLACK ASH	1	0	0	0	1	2
CHOKE CHERRY	2	0	0	0	2	4
SMOOTH SERVICEBERRY	1	2	0	0	3	5
WHITE BIRCH	0	2	1	3	6	11
WHITE CEDAR	0	0	1	1	2	4
TOTAL	13	13	11	20	57	
%	23	23	19	35		

PLOT 10 MATURE DECIDUOUS

HOP-HORNBEAM	6	4	4	7	21	75
CHOKE CHERRY	0	1	0	0	1	4
SUGAR MAPLE	0	1	3	1	5	18
BASSWOOD	0	0	1	0	1	4
TOTAL	6	6	8	8	28	
%	21	21	29	29		

PLOT 11 SEMIMATURE MIXED

TREMBLING ASPEN	6	4	3	6	19	22
WHITE CEDAR	9	0	0	0	9	10
BALSAM FIR	6	6	3	1	16	18
RED OSIER DOGWOOD	1	1	0	6	8	9
ROUND-LEAVED DOGWOOD	0	1	9	18	28	32
CHOKE CHERRY	0	1	0	1	2	2
WHITE BIRCH	0	1	3	2	6	7
TOTAL	22	14	18	34	88	
%	25	16	20	39		

PLOT 12 DISTURBED AREA

NO TREES OR SHRUBS PRESENT
DISTURBED AREA

APPENDIX E

PLANT SPECIES
BNPD VEGETATION PLOTS (1 m x 1 m), 1984

SPECIES	NUMBER OF STEMS					
PLOT #1	SE	SW	NE	NW	T	%
Epipactus helleborine	1	0	0	2	3	9
Trientalis borealis	4	0	0	0	4	11
Maianthemum canadense	1	0	0	1	2	6
Epilobium coloratum	0	2	22	0	24	69
Fraxinus americanus	0	0	2	0	2	6
Grasses (% of quadrat)	3	3	0	0		
Mosses (% of quadrat)	5	0	5	5		
Total	6	2	24	3	35	
%	17	6	69	9		
PLOT #2						
Aster lateriflorus	0	0	3	4	7	3
Pedicularis canadensis	17	38	0	29	84	37
Viola spp	36	12	2	43	93	41
Prunella vulgaris	1	0	0	2	3	1
Tiarella cordifolia	23	0	0	0	23	10
Aster macrophyllus	1	0	1	4	6	3
Aralia nudicaulis	0	0	5	0	5	2
Trientalis borealis	0	0	0	1	1	0
Epipactus helleborine	0	0	0	2	2	1
Maianthemum canadense	0	0	5	0	5	2
Grasses (% of quadrat)	0	7	0	20		
Mosses (% of quadrat)	50	5	0	50		
Total	78	50	16	85	229	
%	34		22	7	37	
PLOT #3						
Cornus rugosa	8	0	0	0	8	6
Solidago graminifolia	3	4	3	4	14	10
Potentilla fruiticosa	7	15	7	7	36	25
Hypericum spp	4	0	0	0	4	3
Solidago spp	30	12	16	8	66	46
Aster vimineus	0	1	3	4	8	6
Iris versicolor	0	2	0	1	3	2
Gentiana crinita	0	0	0	3	3	2
Thuja occidentalis	0	0	0	1	1	1
Rosa spp	0	0	0	2	2	1
Sedges	0	0	0	16		
Grasses (% of quadrat)	90	90	90	90		
Total	52	34	29	30	145	
%	36	23	20	21		

APPENDIX E (Continued)

PLOT #4

Actaea pachypoda	1	1	0	0	2	5
Arisaema atroorubens	1	1	2	0	4	10
Epippactus hellebornine	1	0	0	0	1	3
Tiarella cordifolia	1	0	0	0	1	3
Viola spp	9	8	7	4	28	70
Aster lateriflorus	0	0	0	2	2	5
Maianthemum canadense	0	0	0	2	2	5
Grasses	0	0	0	25		
Total	13	10	9	8	40	
%	33	25	23	20		

PLOT #5

Prunella vulgaris	6	8	7	6	27	9
Aster lateriflorus	1	2	1	3	7	2
Fragaria virginiana	20	28	16	23	87	29
Rhus radicans	11	22	23	14	70	23
Viola spp	14	16	21	10	61	20
Aster macrophyllus	2	3	1	0	6	2
Rubus pubescens	16	9	7	11	43	14
Aralia nudicaulis	0	0	2	0	2	1
Grasses (% of quadrat)						
Total	70	88	78	67	303	
%	23	29	26	22		

PLOT #6

Maianthemum canadense	0	1	0	48	49	82
Trientalis borealis	0	1	0	5	6	10
Aralia nudicaulis	0	0	0	4	4	7
Veronica officinalis	0	0	0	1	1	2
Mosses (% of quadrat)	5	2	0	0		
Total	0	2	0	58	60	
%	0	3	0	97		

PLOT #7

Epipactus helleborine	2	0	0	1	3	8
Acer rubrum	2	0	0	1	3	8
Fraxinus americana	1	1	2	8	12	30
Agrimonia gryposepala	1	0	1	0	2	5
Prunus virginiana	0	8	3	2	13	33
Maianthemum canadense	0	1	0	0	1	3
Ostrya virginiana	0	1	0	0	1	3
Aralia nudicaulis	0	0	1	0	1	3
Actaea pachypoda	0	0	0	1	1	3
Ribes cynosbati	0	2	1	0	3	8
Total	6	13	8	13	40	
%	15	33	20	33		

APPENDIX E (Continued)

PLOT #8

Fragaria virginiana	24	3	53	2	82	29
Rhus radicans	12	2	7	5	26	9
Aster macrophyllus	11	3	0	6	20	7
Pedicularis canadensis	3	0	0	0	3	1
Prunella vulgaris	29	4	21	16	70	25
Viola spp	47	5	17	1	70	25
Rubus pubescens	0	1	5	0	6	2
Aster lateriflorus	0	0	4	0	4	1
Alnus rugosa	0	0	3	0	3	1
Grasses (% of quadrat)	21	0	30	17		
Total	126	18	110	30	284	
%	44	6	39	11		

PLOT #9

Aralia nudicaulis	14	0	9	1	24	21
Viola spp	2	0	1	0	3	3
Rhus radicans	3	2	0	25	30	26
Acer rubrum	1	0	0	0	1	1
Fraxinus americana	1	1	0	1	3	3
Aster macrophyllus	0	0	1	20	21	18
Rubus pubescens	0	0	2	0	2	2
Epipactus helleborine	0	1	0	0	1	1
Actaea pachypoda	0	1	0	0	1	1
Mitchella repens	0	0	1	21	22	19
Polygala paucifolia	0	0	2	4	6	5
Mosses (% of quadrat)						
Total	21	5	16	72	114	
%	18	4	14	63		

PLOT #10

Fraxinus americana	0	1	1	2	4	21
Acer rubrum	0	1	0	0	1	5
Ostrya virginiana	2	1	2	1	6	32
Prunus virginiana	1	3	2	0	6	32
Actaea pachypoda	0	0	0	1	1	5
Epipactus helleborine	0	0	0	1	1	5
Total	3	6	5	5	19	
%	16	32	26	26		

PLOT #11

Anemone cylindrica	0	0	2	0	2	1
Prunella vulgaris	0	3	4	0	7	4
Shepherdia canadensis	0	2	1	0	3	2
Solidago erecta	0	2	0	0	2	1
Aster macrophyllus	17	11	29	44	101	51
Viola spp	6	0	5	0	11	6
Pterdium aquilinium	2	2	1	0	5	3
Cornus rugosa	2	0	2	2	6	3
Fragaria virginiana	2	4	6	0	12	6
Maianthemum canadense	0	0	6	0	6	3
Rhus radicans	3	22	3	0	28	14
Pedicularis canadensis	17	0	0	0	17	9
Grasses (% of quadrat)	30	78	60	43		
Total	49	46	59	46	200	
%	25	23	30	23		

PLOT #12

Hypericum perforatum	18	2	8	8	36	16
Solidago nemoralis	32	0	6	4	42	18
Achillea millefolium	3	1	0	4	8	3
Fragaria virginiana	27	8	0	29	64	28
Daucus carota	4	0	0	2	6	3
Aster ericoides	4	0	2	0	6	3
Solidago graminifolia	2	0	13	3	18	8
Rubus spp	0	1	3	16	20	9
Solidago canadenis	0	0	5	2	7	3
Castilleja coccinea	0	0	5	0	5	2
Prunella vulgaris	0	0	13	0	13	6
Prunus virginiana	0	0	0	5	5	2
Grasses (% of quadrat)	38	98	10	15		
Total	90	12	55	73	230	
%	39	5	24	32		

APPENDIX F

AVIAN SPECIES IDENTIFIED ALONG TRANSECTS
BNPD, 1984

Transect	A	B	C
PIED-BILLED GREBE	0	5	0
BLACK CROWNED NIGHT HERON	0	2	0
CANADA GOOSE	0	1	0
MALLARD	1	27	1
BLACK DUCK	0	7	2
GREEN-WINGED TEAL	0	10	10
BLUE WINGED-TEAL	0	1	0
WOOD DUCK	0	0	1
COMMON GOLDENEYE	0	4	5
BUFFLEHEAD	0	15	5
HOODED MERGANSER	0	3	0
TURKEY VULTURE	0	3	0
SHARP-SHINNED HAWK	1	0	0
RED TAILED HAWK	0	1	0
BROAD WINGED HAWK	0	1	0
RUFFED GROUSE	5	7	1
KILLDEER	7	51	0
COMMON SNIPE	0	1	0
SPOTTED SANDPIPER	0	7	0
HERRING GULL	58	28	5
RING BILLED GULL	13	0	5
ROCK DOVE	29	78	65
MOURNING DOVE	0	3	0
RUBY THROATED HUMMINGBIRD	0	2	0
BELTED KINGFISHER	0	2	0
COMMON FLICKER	7	0	2
PILEATED WOODPECKER	1	1	1
YELLOW BELLIED SAPSUCKER	1	0	0
EASTERN KINGBIRD	0	8	1
EASTERN PHOEBE	1	0	0
YELLOW BELLIED FLYCATCHER	2	0	0
ACADIAN FLYCATCHER	2	0	1
LEAST FLYCATCHER	3	0	0
EASTERN WOOD PEWEE	3	1	0
TREE SWALLOW	15	25	4
BANK SWALLOW	0	4	0
BLUE JAY	39	31	44
COMMON CROW	8	33	25
BLACK CAPPED CHICKADEE	99	6	67
BROWN CREEPER	0	0	3
HOUSE WREN	3	6	2
GRAY CATBIRD	0	2	2
BROWN THRASHER	0	0	1
AMERICAN ROBIN	27	10	18
HERMIT THRUSH	1	0	0
GOLDEN-CROWNED KINGLET	32	30	15
CEDAR WAXWING	46	67	21
STARLING	0	0	3

APPENDIX F (Continued)

RED EYED VIREO	1	0	1
WARBLING VIREO	0	1	3
WOOD WARBLER	2	14	10
TENNESSEE WARBLER	0	62	3
NASHVILLE WARBLER	0	3	1
YELLOW WARBLER	0	5	3
MAGNOLIA WARBLER	1	0	0
YELLOW-RUMPED WARBLER	0	0	11
BLACK-THROATED GREEN WARBLER	0	0	5
COMMON YELLOW THROAT	3	3	0
AMERICAN REDSTART	0	0	2
BOBOLINK	0	4	0
EASTERN MEADOWLARK	0	0	3
RED-WINGED BLACKBIRD	0	150	17
NORTHERN ORIOLE	6	1	3
COMMON GRACKLE	5	0	9
ROSE-BREASTED GROSBEAK	0	2	3
AMERICAN GOLDFINCH	0	46	34
SAVANNAH SPARROW	0	2	0
DARK-EYED JUNCO	10	10	3
TREE SPARROW	24	7	0
CHIPPING SPARROW	5	7	18
FIELD SPARROW	0	1	0
SONG SPARROW	3	15	8
SNOW BUNTING	0	87	0
UNIDENTIFIED	50	0	0

APPENDIX F (Continued)

Transect	D	E	F
RED TAILED HAWK	0	0	1
KILLDEER	0	1	1
AMERICAN WOODCOCK	0	0	1
HERRING GULL	10	2	12
RING BILLED GULL	0	0	3
ROCK DOVE	0	12	46
MOURNING DOVE	0	0	3
COMMON FLICKER	0	1	0
TYRANT FLYCATCHER	2	0	0
EASTERN KINGBIRD	0	0	2
GREAT CRESTED FLYCATCHER	0	0	2
EASTERN PHOEBE	0	0	1
ACADIAN FLYCATCHER	0	2	0
WILLOW FLYCATCHER	0	0	2
LEAST FLYCATCHER	1	0	5
EASTERN WOOD PEWEE	5	0	4
OLIVESIDED FLYCATCHER	0	0	2
TREE SWALLOW	0	0	5
BLUE JAY	25	21	27
COMMON CROW	5	3	6
BLACK CAPPED CHICKADEE	36	42	54
RED BREASTED NUTHATCH	0	0	3
BROWN CREEPER	0	0	2
HOUSE WREN	0	0	5
GRAY CATBIRD	2	0	1
AMERICAN ROBIN	4	13	16
GOLDEN-CROWNED KINGLET	7	0	0
CEDAR WAXWING	28	44	22
RED EYED VIREO	0	1	1
PHILADELPHIA VIREO	0	0	1
WARBLING VIREO	0	0	4
WOOD WARBLER	0	4	0
TENNESSEE WARBLER	0	1	0
YELLOW WARBLER	1	0	0
CHESTNUT-SIDED WARBLER	5	2	6
RED-WINGED BLACKBIRD	1	0	5
NORTHERN ORIOLE	1	1	3
COMMON GRACKLE	1	0	0
BROWN-HEADED COWBIRD	0	0	11
SCARLET TANAGER	0	1	0
ROSE-BREASTED GROSBEAK	18	19	5
PURPLE FINCH	14	233	0
COMMON REDPOLL	0	19	0
AMERICAN GOLDFINCH	2	0	0
DARK-EYED JUNCO	14	4	14
TREE SPARROW	0	0	26
CHIPPING SPARROW	4	14	3
SONG SPARROW	12	5	8

Transect	G	H	I
GREAT BLUE HERON	0	0	1
CANADA GOOSE	0	1	0
TURKEY VULTURE	0	1	0
RED TAILED HAWK	0	1	0
AMERICAN KESTREL	1	0	0
RUFFED GROUSE	6	1	0
KILLDEER	0	4	0
AMERICAN WOODCOCK	0	0	2
HERRING GULL	15	10	15
RING BILLED GULL	50	0	0
ROCK DOVE	38	0	12
MOURNING DOVE	5	1	5
BELTED KINGFISHER	0	3	0
COMMON FLICKER	4	1	0
PILEATED WOODPECKER	0	0	1
HAIRY WOODPECKER	0	2	3
DOWNY WOODPECKER	0	1	0
EASTERN KINGBIRD	0	3	3
GREAT CRESTED FLYCATCHER	1	0	0
EASTERN PHOEBE	1	0	0
ACADIAN FLYCATCHER	3	0	0
WILLOW FLYCATCHER	2	0	0
LEAST FLYCATCHER	3	0	0
EASTERN WOOD PEWEE	3	0	1
OLIVESIDED FLYCATCHER	0	0	2
TREE SWALLOW	0	0	4
BLUE JAY	40	14	29
COMMON CROW	3	5	9
BLACK CAPPED CHICKADEE	41	47	74
WHITE BREASTED NUTHATCH	5	1	0
BROWN CREEPER	2	0	0
HOUSE WREN	1	3	11
WINTER WREN	2	0	0
GRAY CATBIRD	3	0	2
AMERICAN ROBIN	16	17	14
GOLDEN-CROWNED KINGLET	6	6	34
RUBY-CROWNED KINGLET	3	0	0
CEDAR WAXWING	55	37	146
STARLING	0	5	7
SOLITARY VIREO	2	0	0
RED EYED VIREO	3	0	0
WARBLING VIREO	0	1	5
WOOD WARBLER	0	0	20
TENNESSEE WARBLER	4	1	14
NASHVILLE WARBLER	0	2	0
YELLOW WARBLER	0	4	0
MAGNOLIA WARBLER	0	6	0
BLACK-THROATED BLUE WARBLER	0	1	0
PINE WARBLER	0	4	0
COMMON YELLOW THROAT	0	0	3
BOBOLINK	5	1	0
EASTERN MEADOWLARK	0	0	1
RED-WINGED BLACKBIRD	0	38	0
NORTHERN ORIOLE	6	2	3

APPENDIX F (Continued)

COMMON GRACKLE	9	2	3
BROWN-HEADED COWBIRD	1	0	0
SCARLET TANAGER	2	0	0
ROSE-BREASTED GROSBEAK	1	2	6
INDIGO BUNTING	0	1	2
COMMON REDPOLL	0	0	7
AMERICAN GOLDFINCH	2	9	8
DARK-EYED JUNCO	28	3	19
TREE SPARROW	14	10	6
CHIPPING SPARROW	27	14	22
HARRIS'S SPARROW	2	0	0
FOX SPARROW	0	0	3
SONG SPARROW	11	3	10
SNOW BUNTING	25	0	0
UNIDENTIFIED	0	212	185

Transect	J	K	L
COMMON LOON	0	1	0
HORNED GREBE	0	8	0
PIED-BILLED GREBE	3	0	0
DOUBLE CRESTED CORMORANT	4	2	0
GREAT BLUE HERON	8	0	4
BLACK CROWNED NIGHT HERON	1	0	0
MALLARD	22	1	0
BLACK DUCK	11	2	0
LESSER SCAUP	76	0	0
COMMON GOLDENEYE	2	4	0
BUFFLEHEAD	1	0	0
OLD SQUAW	2	0	0
BLACK SCOTER	1	0	0
COMMON MERGANSER	244	86	5
RED-BREASTED MERGANSER	83	331	0
TURKEY VULTURE	3	0	0
RUFFED GROUSE	0	0	2
AMERICAN COOT	8	0	0
KILLDEER	7	1	0
LEAST SANDPIPER	0	2	0
GLAUCOUS GULL	0	1	0
GREAT BLACK BACKED GULL	11	0	0
HERRING GULL	567	103	70
RING BILLED GULL	571	115	15
BONAPARTE'S GULL	0	80	0
CASPIAN TERN	1	1	1
ROCK DOVE	5	0	0
MOURNING DOVE	4	3	2
BELTED KINGFISHER	6	2	14
COMMON FLICKER	0	6	2
PILEATED WOODPECKER	0	1	1
EASTERN KINGBIRD	1	0	5
WILLOW FLYCATCHER	0	0	1
TREE SWALLOW	21	10	4
BARN SWALLOW	11	0	0
BLUE JAY	0	33	32
COMMON CROW	3	37	2
BLACK CAPPED CHICKADEE	0	54	61
HOUSE WREN	0	5	3
GRAY CATBIRD	0	0	1
AMERICAN ROBIN	0	28	32
GOLDEN-CROWNED KINGLET	0	5	11
CEDAR WAXWING	1	151	124
STARLING	13	15	0
PHILADELPHIA VIREO	1	0	0

WARBLING VIREO	3	0	0
WOOD WARBLER	0	0	25
YELLOW WARBLER	2	0	2
YELLOW-RUMPED WARBLER	0	1	0
COMMON YELLOW THROAT	0	0	6
RED-WINGED BLACKBIRD	2	5	45
COMMON GRACKLE	1	0	0
BROWN-HEADED COWBIRD	2	0	0
ROSE-BREASTED GROSBEAK	0	3	0
PINE SISKIN	1	0	0
AMERICAN GOLDFINCH	2	1	0
TREE SPARROW	3	15	4
CHIPPING SPARROW	19	14	11
FIELD SPARROW	1	0	3
SWAMP SPARROW	6	0	2
SONG SPARROW	8	7	21
SNOW BUNTING	5	8	6
UNIDENTIFIED	0	200	300

APPENDIX F (Continued)

Transect	M	N	O
GREAT BLUE HERON	0	1	0
BLACK DUCK	5	0	0
TURKEY VULTURE	3	0	0
RED TAILED HAWK	1	0	0
RUFFED GROUSE	3	2	0
AMERICAN WOODCOCK	0	1	0
HERRING GULL	7	7	10
RING BILLED GULL	0	0	7
ROCK DOVE	0	0	2
MOURNING DOVE	0	5	0
COMMON NIGHT HAWK	0	1	0
BELTED KINGFISHER	0	1	0
COMMON FLICKER	4	0	10
DOWNY WOODPECKER	0	0	1
EASTERN KINGBIRD	4	0	2
EASTERN PHOEBE	0	0	1
ACADIAN FLYCATCHER	0	1	0
LEAST FLYCATCHER	3	0	0
EASTERN WOOD PEWEE	0	2	0
TREE SWALLOW	5	1	0
BLUE JAY	29	31	24
COMMON CROW	15	4	12
BLACK CAPPED CHICKADEE	61	82	68
RED BREASTED NUTHATCH	0	2	0
BROWN CREEPER	0	2	1
HOUSE WREN	7	5	3
WINTER WREN	3	1	0
GRAY CATBIRD	0	2	0
AMERICAN ROBIN	25	23	24
WOOD THRUSH	0	0	7
VEERY	0	1	0
GOLDEN-CROWNED KINGLET	6	10	12
CEDAR WAXWING	81	54	56
STARLING	100	0	0
SOLITARY VIREO	0	1	0
WARBLING VIREO	0	2	0
WOOD WARBLER	7	9	0
TENNESSEE WARBLER	0	1	0
NASHVILLE WARBLER	0	1	0
YELLOW WARBLER	0	2	5
YELLOW-RUMPED WARBLER	0	3	0
BLACK-THROATED GREEN WARBLER	0	1	0
BLACK POLL WARBLER	3	0	0
PINE WARBLER	0	0	5
COMMON YELLOW THROAT	0	0	2
CANADA WARBLER	0	0	4
BOBOLINK	1	0	1
EASTERN MEADOWLARK	3	0	1
NORTHERN ORIOLE	5	1	1
COMMON GRACKLE	2	2	0
SCARLET TANAGER	0	0	3

ROSE-BREASTED GROSBEAK	1	7	0
INDIGO BUNTING	0	1	0
PURPLE FINCH	169	0	3
AMERICAN GOLDFINCH	0	29	0
DARK-EYED JUNCO	10	11	6
TREE SPARROW	0	7	1
CHIPPING SPARROW	11	5	22
WHITE-THROATED SPARROW	0	9	0
SONG SPARROW	6	7	13
SNOW BUNTING	0	0	2
UNIDENTIFIED	0	40	25

Transect	P
RED-NECKED GREBE	1
DOUBLE CRESTED CORMORANT	3
LESSER SCAUP	20
BUFFLEHEAD	44
COMMON MERGANSER	1018
RED-BREASTED MERGANSER	433
HERRING GULL	360
RING-BILLED GULL	255
SNOWY OWL	1

APPENDIX G

AVIAN SPECIES LIST BNPD, 1984

COMMON NAME	SCIENTIFIC NAME
COMMON LOON	*Gavia immer*
RED-NECKED GREBE	*Podiceps grisegena*
HORNED GREBE	*Podiceps auritus*
PIED-BILLED GREBE	*Podilymbus podiceps*
DOUBLE CRESTED CORMORANT	*Phalacrocorax auritus*
GREAT BLUE HERON	*Ardea herodias*
GREAT EGRET	*Casmerodius albus*
SNOWY EGRET	*Egretta thula*
GREEN HERON	*Butorides striatus*
BLACK CROWNED NIGHT HERON	*Nycticorax nycticorax*
AMERICAN BITTERN	*Botaurus lentiginosus*
TUNDRA SWAN	*Cygnus columbianus*
CANADA GOOSE	*Branta canadensis*
SNOW GOOSE	*Chen caerulescens*
MALLARD	*Anas platyrhynchos*
AMERICAN BLACK DUCK	*Anas rubripes*
GREEN-WINGED TEAL	*Anas crecca*
BLUE-WINGED TEAL	*Anas discors*
WOOD DUCK	*Aix sponsa*
RING-NECKED DUCK	*Aythya collaris*
GREATER SCAUP	*Aythya marila*
LESSER SCAUP	*Aythya affinis*
COMMON GOLDENEYE	*Bucephala clangula*
BUFFLEHEAD	*Bucephala albeola*
OLDSQUAW	*Clangula hyemalis*
BLACK SCOTER	*Melanitta nigra*
HOODED MERGANSER	*Lophodytes cucullatus*
COMMON MERGANSER	*Mergus merganser*
RED-BREASTED MERGANSER	*Mergus serrator*
TURKEY VULTURE	*Cathartes aura*
SHARP-SHINNED HAWK	*Accipter striatus*
RED-TAILED HAWK	*Buteo jamaicensis*
BROAD-WINGED HAWK	*Buteo platypterus*
BALD EAGLE	*Haliaeetus leucocephalus*
NORTHERN HARRIER	*Circus cyaneus*
AMERICAN KESTREL	*Falco sparverius*
RUFFED GROUSE	*Bonasa umbellus*
AMERICAN COOT	*Fulica americana*
KILLDEER	*Charadrius vociferus*
AMERICAN WOODCOCK	*Philohela minor*
COMMON SNIPE	*Capella gallinago*
SPOTTED SANDPIPER	*Actitis macularia*
LEAST SANDPIPER	*Calidris minutilla*
GLAUCOUS GULL	*Larus hyperboreus*
GREAT BLACK-BACKED GULL	*Larus marinus*
HERRING GULL	*Larus argentatus*
RING-BILLED GULL	*Larus delawarensis*
BONAPARTE'S GULL	*Larus philadelphia*
COMMON TERN	*Sterna hirundo*
CASPIAN TERN	*Sterna caspia*

COMMON NAME	SCIENTIFIC NAME
ROCK DOVE	*Columba livia*
MOURNING DOVE	*Zenaida macroura*
COMMON NIGHTHAWK	*Chordeiles minor*
RUBY-THROATED HUMMINGBIRD	*Archilochus colubris*
BELTED KINGFISHER	*Megaceryl alcyon*
COMMON FLICKER	*Colaptes auratus*
PILEATED WOODPECKER	*Dryocopus pileatus*
RED-HEADED WOODPECKER	*Melanerpes erythrocephalus*
YELLOW-BELLIED SAPSUCKER	*Sphyrapicus varius*
HAIRY WOODPECKER	*Picoides villosus*
DOWNY WOODPECKER	*Picoides pubescens*
EASTERN KINGBIRD	*Tyrannus tyrannus*
GREAT CRESTED FLYCATCHER	*Myiarchus crinitus*
EASTERN PHOEBE	*Sayornis phoebe*
YELLOW BELLIED FLYCATCHER	*Empidonax flaviventris*
ACADIAN FLYCATCHER	*Empidonas virescens*
WILLOW FLYCATCHER	*Empidonax trailli*
LEAST FLYCATCHER	*Empidonax minimus*
EASTERN PEWEE	*Contopus virens*
OLIVE-SIDED FLYCATCHER	*Nuttallornis borealis*
TREE SWALLOW	*Iridoprocne bicolor*
BANK SWALLOW	*Riparia riparia*
ROUGH-WINGED SWALLOW	*Stelgidopteryx ruficollis*
BARN SWALLOW	*Hirundo rustica*
CLIFF SWALLOW	*Petrochelidon pyrrhonota*
BLUE JAY	*Cyanocitta cristata*
COMMON CROW	*Corvus brachyrhynchos*
BLACK-CAPPED CHICKADEE	*Parus atricapillus*
WHITE-BREASTED NUTHATCH	*Sitta carolinensis*
RED-BREASTED NUTHATCH	*Sitta canadensis*
BROWN CREEPER	*Certhia familiaris*
HOUSE WREN	*Troglodytes aedon*
WINTER WREN	*Troglodytes troglodytes*
GRAY CATBIRD	*Dumetella carolinensis*
BROWN THRASHER	*Toxostoma rufum*
AMERICAN ROBIN	*Turdus migratorius*
WOOD THRUSH	*Hylocichla mustelina*
HERMIT THRUSH	*Catharus guttatus*
SWAINSON'S THRUSH	*Catharus ustulatus*
VEERY	*Catharus fuscescens*
GOLDEN-CROWNED KINGLET	*Regulus satrapa*
RUBY-CROWNED KINGLET	*Regulus calendula*
CEDAR WAXWING	*Bombycilla cedrorum*
EUROPEAN STARLING	*Sturnus vulgaris*
YELLOW THROATED VIREO	*Vireo flavifrons*
SOLITARY VIREO	*Vireo solitarius*
RED-EYED VIREO	*Vireo olivaceus*
PHILADELPHIA VIREO	*Vireo philadelphicus*
WARBLING VIREO	*Vireo gilvus*
TENNESSEE WARBLER	*Vermivora peregrina*

COMMON NAME	SCIENTIFIC NAME
NASHVILLE WARBLER	*Vermivora ruficapilla*
YELLOW WARBLER	*Dendroica petechia*
MAGNOLIA WARBLER	*Dendroica magnolia*
BLACK-THROATED BLUE WARBLER	*Dendroica caerulescens*
YELLOW-RUMPED (MYRTLE) WARBLER	*Dendroica coronata*
BLACK-THROATED GREEN WARBLER	*Dendroica virens*
CHESTNUT-SIDED WARBLER	*Dendroica pensylvanica*
BLACKPOLL WARBLER	*Dendroica striata*
PINE WARBLER	*Dendroica pinus*
COMMON YELLOWTHROAT	*Geothlypis trichas*
CANADA WARBLER	*Wilsonia canadensis*
AMERICAN REDSTART	*Setophaga ruticilla*
BOBOLINK	*Dolichonyx oryzivorus*
EASTERN MEADOWLARK	*Sturnella magna*
RED-WINGED BLACKBIRD	*Agelaius phoeniceus*
NORTHERN ORIOLE	*Icterus galbula*
COMMON GRACKLE	*Quiscalus quiscula*
BROWN-HEADED COWBIRD	*Molothrus ater*
SCARLET TANAGER	*Piranga olivacea*
ROSE-BREASTED GROSBEAK	*Pheucticus ludovicianus*
INDIGO BUNTING	*Passerina cyanea*
PURPLE FINCH	*Carpodacus purpureus*
COMMON REDPOLL	*Carduelis flammea*
PINE SISKIN	*Carduelis pinus*
AMERICAN GOLDFINCH	*Carduelis tristis*
RUFOUS-SIDED TOWHEE	*Pipilo erythrophthalmus*
SAVANNAH SPARROW	*Passerculus sandwichensis*
DARK-EYED JUNCO	*Junco hyemalis*
AMERICAN TREE SPARROW	*Spizella arborea*
CHIPPING SPARROW	*Spizella passerina*
FIELD SPARROW	*Spizella pusilla*
HARRIS'S SPARROW	*Zonotrichia querula*
WHITE-CROWNED SPARROW	*Zonotrichia leucophrys*
WHITE-THROATED SPARROW	*Zonotrichia albicollis*
FOX SPARROW	*Passerella iliaca*
SWAMP SPARROW	*Melospiza georgiana*
SONG SPARROW	*Melospiza melodia*
SNOW BUNTING	*Plectrophenax nivalis*

APPENDIX H

AVIAN SPECIES, TOTAL NUMBERS
AND PER CENT COMPOSITION
BNPD, 1984

COMMON LOON	1.0	0.0
RED-NECKED GREBE	1.0	0.0
HORNED GREBE	8.0	0.1
PIED-BILLED GREBE	8.0	0.1
DOUBLE CRESTED CORMORANT	9.0	0.1
GREAT BLUE HERON	14.0	0.1
BLACK CROWNED NIGHT HERON	3.0	0.0
CANADA GOOSE	2.0	0.0
MALLARD	52.0	0.4
BLACK DUCK	27.0	0.2
GREEN-WINGED TEAL	20.0	0.2
BLUE WINGED-TEAL	1.0	0.0
WOOD DUCK	1.0	0.0
LESSER SCAUP	96.0	0.8
COMMON GOLDENEYE	15.0	0.1
BUFFLEHEAD	65.0	0.6
OLD SQUAW	2.0	0.0
BLACK SCOTER	1.0	0.0
HOODED MERGANSER	3.0	0.0
COMMON MERGANSER	1353.0	11.5
RED-BREASTED MERGANSER	847.0	7.2
TURKEY VULTURE	10.0	0.1
SHARP-SHINNED HAWK	1.0	0.0
RED TAILED HAWK	4.0	0.0
BROAD WINGED HAWK	1.0	0.0
AMERICAN KESTREL	1.0	0.0
RUFFED GROUSE	27.0	0.2
AMERICAN COOT	8.0	0.1
KILLDEER	72.0	0.6
AMERICAN WOODCOCK	4.0	0.0
COMMON SNIPE	1.0	0.0
SPOTTED SANDPIPER	7.0	0.1
LEAST SANDPIPER	2.0	0.0
GLAUCOUS GULL	1.0	0.0
GREAT BLACK BACKED GULL	11.0	0.1
HERRING GULL	1279.0	10.8
RING-BILLED GULL	1034.0	8.8
BONAPARTE'S GULL	80.0	0.7
CASPIAN TERN	3.0	0.0
ROCK DOVE	287.0	2.4
MOURNING DOVE	31.0	0.3
SNOWY OWL	1.0	0.0
COMMON NIGHT HAWK	1.0	0.0
RUBY-THROATED HUMMINGBIRD	2.0	0.0
BELTED KINGFISHER	28.0	0.2
COMMON FLICKER	37.0	0.3
PILEATED WOODPECKER	6.0	0.1
YELLOW-BELLIED SAPSUCKER	1.0	0.0
HAIRY WOODPECKER	5.0	0.0
DOWNY WOODPECKER	2.0	0.0
TYRANT FLYCATCHER	2.0	0.0
EASTERN KINGBIRD	29.0	0.2
GREAT CRESTED FLYCATCHER	3.0	0.0
EASTERN PHOEBE	4.0	0.0
YELLOW BELLIED FLYCATCHER	2.0	0.0

ACADIAN FLYCATCHER	9.0	0.1
WILLOW FLYCATCHER	5.0	0.0
LEAST FLYCATCHER	15.0	0.1
EASTERN WOOD PEWEE	19.0	0.2
OLIVESIDED FLYCATCHER	4.0	0.0
TREE SWALLOW	94.0	0.8
BANK SWALLOW	4.0	0.0
BARN SWALLOW	11.0	0.1
BLUE JAY	419.0	3.5
COMMON CROW	170.0	1.4
BLACK-CAPPED CHICKADEE	792.0	6.7
WHITE BREASTED NUTHATCH	6.0	0.1
RED-BREASTED NUTHATCH	5.0	0.0
BROWN CREEPER	10.0	0.1
HOUSE WREN	54.0	0.5
WINTER WREN	6.0	0.1
GRAY CATBIRD	15.0	0.1
BROWN THRASHER	1.0	0.0
AMERICAN ROBIN	267.0	2.3
WOOD THRUSH	7.0	0.1
HERMIT THRUSH	1.0	0.0
VEERY	1.0	0.0
GOLDEN-CROWNED KINGLET	174.0	1.5
RUBY-CROWNED KINGLET	3.0	0.0
CEDAR WAXWING	933.0	7.9
STARLING	143.0	1.2
SOLITARY VIREO	3.0	0.0
RED-EYED VIREO	7.0	0.1
PHILADELPHIA VIREO	2.0	0.0
WARBLING VIREO	19.0	0.2
WOOD WARBLER	91.0	0.8
TENNESSEE WARBLER	86.0	0.7
NASHVILLE WARBLER	7.0	0.1
YELLOW WARBLER	24.0	0.2
MAGNOLIA WARBLER	7.0	0.1
BLACK-THROATED BLUE WARBLER	1.0	0.0
YELLOW-RUMPED WARBLER	15.0	0.1
BLACK-THROATED GREEN WARBLER	6.0	0.1
CHESTNUT-SIDED WARBLER	13.0	0.1
BLACK POLL WARBLER	3.0	0.0
PINE WARBLER	9.0	0.1
COMMON YELLOW THROAT	17.0	0.1
CANADA WARBLER	4.0	0.0
AMERICAN REDSTART	2.0	0.0
BOBOLINK	12.0	0.1
EASTERN MEADOWLARK	8.0	0.1
RED-WINGED BLACKBIRD	263.0	2.2
NORTHERN ORIOLE	33.0	0.3
COMMON GRACKLE	34.0	0.3
BROWN-HEADED COWBIRD	14.0	0.1
SCARLET TANAGER	6.0	0.1
ROSE-BREASTED GROSBEAK	67.0	0.6
INDIGO BUNTING	4.0	0.0
PURPLE FINCH	419.0	3.5
COMMON REDPOLL	26.0	0.2

PINE SISKIN	1.0	0.0
AMERICAN GOLDFINCH	133.0	1.1
SAVANNAH SPARROW	2.0	0.0
DARK-EYED JUNCO	160.0	1.4
TREE SPARROW	117.0	1.0
CHIPPING SPARROW	195.0	1.7
FIELD SPARROW	5.0	0.0
HARRIS'S SPARROW	2.0	0.0
WHITE-THROATED SPARROW	9.0	0.1
FOX SPARROW	3.0	0.0
SWAMP SPARROW	8.0	0.1
SONG SPARROW	137.0	1.2
SNOW BUNTING	133.0	1.1
UNIDENTIFIED	1012.0	8.6
TOTAL	11803.0	

NUMBER OF SPECIES = 121 DIVERSITY = 4.69252

APPENDIX 1

BIRD TRANSECT HABITAT
BNPD, 1984

TRANSECT	HABITAT CLASSIFICATION	MAJOR TREE AND SHRUB SPECIES	AGE
A	UNEVEN AGED CONIFER SEMI MATURE MIXED	BALSAM FIR	IMMATURE
		EASTERN WHITE CEDAR	MATURE
		WHITE PINE	MATURE
		TREMBLING ASPEN	SEMIMATURE
		WHITE BIRCH	MATURE
		FLOWERING DOGWOOD	
		BLACK ASH	SEMI MATURE
		RED ASH	SEMI MATURE
		CHOKE CHERRY	SEMI MATURE
B	DISTURBED AREA TIE ROAD POND BURIAL GROUND PONDS BEAVER POND	WILLOW SPP	
		HAWTHORN	
		APPLE SPP	MATURE
		BALSAM FIR	IMMATURE
		SUGAR MAPLE	MATURE
		GROUND JUNIPER	
		WHITE ASH	MATURE
		CHOKE CHERRY	SEMI MATURE
		TREMBLING ASPEN	IMMATURE
		FLOWERING DOGWOOD	
C	ABANDONED ORCHARD BURIAL GROUNDS MATURE DECIDUOUS UNEVEN DECIDUOUS SEMI MATURE MIXED	APPLE SPP	MATURE
		GROUND JUNIPER	
		BALSAM FIR	SEMI MATURE
		FLOWERING DOGWOOD	
		WILLOW SPP	
		BLACK ASH	SEMI MATURE
		EASTERN WHITE CEDAR	SEMI MATURE
		SUGAR MAPLE	MATURE
		BEECH	MATURE
		WHITE ASH	MATURE
D	MATURE DECIDUOUS	HOPHORNBEAM	SEMI MATURE
		WHITE BIRCH	SEMI MATURE
		BEECH	MATURE
		CHOKE CHERRY	MATURE
		SUGAR MAPLE	MATURE
		WHITE ASH	MATURE
		BLACK CHERRY	MATURE
		YELLOW BIRCH	IMMATURE

APPENDIX I (Continued)

E	MATURE DECIDUOUS UNEVEN AGED MIXED	SUGAR MAPLE	MATURE
		BEECH	MATURE
		WHITE ASH	UNEVEN AGED
		BALSAM FIR	IMMATURE
		TREMBLING ASPEN	IMMATURE
		HOPHORNBEAM	UNEVEN AGED
		YELLOW BIRCH	IMMATURE
		SERVICEBERRY	SEMI MATURE
		CHOKE CHERRY	UNEVEN AGED
		FLOWERING DOGWOOD	
F	UNEVEN AGED DECIDUOUS UNEVEN AGED MIXED CENTRAL SERVICES POND	SUGAR MAPLE	MATURE
		WHITE ASH	MATURE
		CHOKE CHERRY	SEMI MATURE
		BLACK CHERRY	MATURE
		WHITE BIRCH	MATURE
		HOPHORNBEAM	MATURE
		TREMBLING ASPEN	IMMATURE
		SERVICEBERRY	
		BALSAM FIR	UNEVEN AGED
		BALSAM POPLAR	IMMATURE
		BEECH	MATURE
G	UNEVEN AGED MIXED SEMI MATURE MIXED	BALSAM FIR	UNEVEN AGED
		EASTERN WHITE CEDAR	MATURE
		WILLOW SPP	
		TREMBLING ASPEN	UNEVEN AGED
		BALSAM POPLAR	IMMATURE
		BUTTERNUT	MATURE
		WHITE BIRCH	MATURE
		MOUNTAIN MAPLE	IMMATURE
		FLOWERING DOGWOOD	
		RED ASH	MATURE
		BLACK ASH	UNEVEN AGED
H	IMMATURE MIXED SEMI MATURE MIXED GRASS HILL GRASS HILL POND	BALSAM FIR	IMMATURE
		EASTERN WHITE CEDAR	MATURE
		WILLOW SPP	
		TREMBLING ASPEN	IMMATURE
		FLOWERING DOGWOOD	
		WHITE ASH	IMMATURE
		RED ASH	IMMATURE

APPENDIX I Continued

I	IMMATURE MIXED	BALSAM FIR	IMMATURE
		WHITE CEDAR	MATURE
		WILLOW SPP	
		TREMBLING ASPEN	UNEVEN AGED
		BALSAM POPLAR	IMMATURE
		BUTTERNUT	SEMI MATURE
		WHITE BIRCH	MATURE
		FLOWERING DOGWOOD	
		WHITE ASH	UNEVEN AGED
		RED ASH	UNEVEN AGED
J	BAIE DU DORE	MARSHLAND SPECIES	
	LAKE HURON SHORELINE	TREMBLING ASPEN	IMMATURE
	ARMOUR STONE	WHITE BIRCH	IMMATURE
	GRAVEL	CHOKE CHERRY	IMMATURE
		WHITE CEDAR	UNEVEN AGED
		BALSAM POPLAR	
		WILLOW SPP	
K	BAIE DU DORE SHORELINE	EASTERN WHITE CEDAR	MATURE
	GREAT LAKES INSTITUTE	WILLOW SPP	
	GLI NORTH POND		
L	MATURE CONIFER	EASTERN WHITE CEDAR	MATURE
	GLI SOUTH PONDS	WILLOW SPP	
	BAIE DU DORE	MARSHLAND SPECIES	
M	MATURE DECIDUOUS	SUGAR MAPLE	MATURE
		BEECH	MATURE
		WHITE ASH	MATURE
		HOPHORNBEAM	SEMI MATURE
		WHITE BIRCH	MATURE
		FLOWERING DOGWOOD	
		SERVICEBERRY	
		TREMBLING ASPEN	SEMI MATURE
N	IMMATURE MIXED	TREMBLING ASPEN	IMMATURE
	MATURE CONIFER	EASTERN WHITE CEDAR	MATURE
	OPENING	LARCH	IMMATURE
		FLOWERING DOGWOOD	
		WHITE ASH	MATURE
		WILLOW SPP	
		GRASSES	
		SEDGES	
O	LAKE HURON SHORELINE	GRASS	
	ARMOUR STONE		
	GRAVEL		

P	LAKE HURON SHORELINE	GRASS
	ARMOUR STONE	
	GRAVEL	

APPENDIX J

ADDITIONAL WATERFOWL SIGHTINGS
BNPD, 1984

DATE	SPECIES	NUMBER	LOCATION	ACTIVITY
MAY 1	CASPIAN TERN	15	BRUCE GS 'A' SPIT	RESTING
MAY 2	DOUBLE-CRESTED CORMORANT	10	SOUTH BAIE DU DORE	FLYING
	CASPIAN TERN	15	BRUCE GS 'A' SPIT	RESTING
	DOUBLE-CRESTED CORMORANT	2	BRUCE GS 'A' DISCHARGE	FLYING
	HOODED MERGANSER	2	BRUCE GS 'A' DISCHARGE	SWIMMING
MAY 14	COMMON MERGANSER	2	BAIE DU DORE OFF RESEARCH TRAILER	SWIMMING
	BUFFLEHEAD	3	BAIE DU DORE OFF RESEARCH TRAILER	SWIMMING
	CASPIAN TERN	30	BAIE DU DORE OFF RESEARCH TRAILER	SWIMMING
	COMMON MERGANSER	10	HOLMES BAY	SWIMMING
	COMMON MERGANSER	4	DOUGLAS POINT	SWIMMING
	COMMON MERGANSER	10	BAIE DU DORE	SWIMMING
	GREAT BLUE HERON	5	BAIE DU DORE ISLAND	FEEDING
	AMERICAN COOT	1	BAIE DU DORE	FEEDING
	BELTED KINGFISHER	1	BAIE DU DORE	FEEDING
	TUNDRA SWAN	1	BAIE DU DORE	SWIMMING
MAY 15	BUFFLEHEAD	4	TIE ROAD POND	SWIMMING
	AMERICAN COOT	1	TIE ROAD POND	SWIMMING
	GREEN HERON	1	BEAVER POND	STANDING
	BUFFLEHEAD	1	BEAVER POND	
JUNE 26	GREAT BLUE HERON	3	BAIE DU DORE	FEEDING
	AMERICAN COOT	1	BAIE DU DORE	FEEDING
JULY 11	MALLARD	3	BEAVER POND	NESTING
JULY 30	NORTHERN HARRIER	1	BAIE DU DORE	FLYING

APPENDIX J (Continued)

AUG 22	AMERICAN BITTERN	1	BAIE DU DORE	FEEDING
SEPT 18	CANADA GEESE	35	HOLMES BAY	SWIMMING
	RING-BILLED GULL	50	BRUCE GS 'B' EMBANKMENT	LOAFING
SEPT 20	GULL SPP	1000	BAIE DU DORE	FLYING INLAND
SEPT 24	MALLARD	12	BAIE DU DORE	SWIMMING
	DOUBLE-CRESTED CORMORANT	4	BAIE DU DORE	FEEDING
SEPT 25	RING-BILLED GULL	30	BRUCE GS 'B' EMBANKMENT	LOAFING
SEPT 27	BLACK DUCK	18	HOLMES BAY	FLYING
	CANADA GEESE	80	HOLMES BAY	FLYING
	RING-BILLED GULL	10	BRUCE GS 'B' DISCHARGE	LOAFING
NOV 8	RED-BREASTED MERGANSER	80	SCOTT POINT	FEEDING
	COMMON MERGANSER	30	SCOTT POINT	FEEDING
	RING-BILLED GULL	50	SCOTT POINT	FEEDING
	HERRING GULL	20	SCOTT POINT	FEEDING
	BONAPARTE'S GULL	30	SCOTT POINT	FEEDING
	CANADA GEESE	6	BRUCE GS 'B' DISCHARGE	SWIMMING
NOV 9	COMMON MERGANSER	100	MACPHERSON BAY	SWIMMING
	RED-BREASTED MERGANSER	100	MACPHERSON BAY	SWIMMING
	BUFFLEHEAD	20	MACPHERSON BAY	SWIMMING
	BUFFLEHEAD	8	GULL COLONY	SWIMMING
	BLACK DUCK	5	BEAVER POND	FLYING
	BUFFLEHEAD	1	BEAVER POND	FLYING
	GREEN-WINGED TEAL	3	BEAVER POND	FLYING
	BUFFLEHEAD	5	TIE ROAD POND	SWIMMING
	GOLDENEYE	3	TIE ROAD POND	SWIMMING

NOV	20	RED-BREASTED MERGANSER	35	BRUCE GS 'B' DISCHARGE	SWIMMING
		BUFFLEHEAD	1	BRUCE GS 'B' DISCHARGE	SWIMMING
		RED-BREASTED MERGANSER	23	BRUCE GS 'B' INTAKE	SWIMMING

APPENDIX K

ADDITIONAL AVIAN SIGHTINGS
BNPD, 1979-84

SPECIES		LOCATION	NUMBER	YEAR	OBSERVERS
GREAT BLUE HERON	*Ardea herodias*	BRUCE 'A' FOREBAY	6	1984	S. GRIFFITHS H. KOWALYK P. NIKLAS B. SIM
GREAT EGRET	*Casmerodius albus*	BAIE DU DORE	3	1979	B. LYONS R. SHEEHAN
SNOWY EGRET	*Egretta thula*	BAIE DU DORE	1	1984	BNPD STAFF
BLACK-CROWNED NIGHT HERON	*Nycticorax nycticorax*	BRUCE 'A' FOREBAY	100	1984	S. GRIFFITHS H. KOWALYK
AMERICAN BITTERN	*Botaurus lentiginosus*	BAIE DU DORE	1	1979	R. LYON R. SHEEHAN
			1	1984	R. SHEEHAN
			1	1984	D. CHUBBUCK L. ONISTO R. SHEEHAN
TUNDRA SWAN	*Cygnus columbianus*	BAIE DU DORE	1	1984	H. KOWALYK L. ONISTO R. SHEEHAN
SNOW GOOSE	*Chen caerulescens*	BAIE DU DORE	2	1981	R. LYON D. LOWTHER
		BAIE DU DORE	1	1983	D. LOWTHER
WOOD DUCK	*Aix sponsa*	BAIE DU DORE	1	1979	L. KING B. LYON R. SHEEHAN
BALD EAGLE	*Haliaeetus leucocephalus*	BAIE DU DORE	1	1984	BNPD STAFF
NORTHERN HARRIER	*Circus cyaneus*	BAIE DU DORE	1	1984	L. ONISTO
		SOUTH OF BAIE DU DORE	1	1984	R. SHEEHAN
RUFOUS-SIDED TOWHEE	*Pipilo erythrophthalmus*	BURIAL GROUNDS	1	1984	R. SHEEHAN

APPENDIX L

MAMMALS COMMON TO THE BNPD AREA

Sorex cinereus	Common shrew
Sorex fumeus	Smoky shrew
Sorex palustris	Water shrew
Microsorex hoyi	Pygmy shrew
Blarina brevicauda	Short-tailed shrew
Parascalopsbreweri	Hairy-tailed mole
Condylura cristata	Star-nosed mole
Myotis lucifugus	Little brown bat
Myotis keenii	Eastern long-eared bat
Lasionycteris noctivagans	Silver-haired bat
Eptesicus fuscus	Big brown bat
Lasiuris borealis	Red bat
Lasiuris cinereus	Hoary bat
Lepus americana	Varying hare
Lepus europaeus	European hare
Sylvilagus floridanus	Cottontail
Sciurius carolinensis	Eastern gray squirrel
Ecuruils roux	Red squirrel
Marmota monax	Groundhog
Tamias striatus	Eastern chipmunk
Glaucomys volans	Eastern flying squirrel
Glaucomys sabrinus	Northern flying squirrel
Castor canadensis	Beaver
Peromyscus maniculatus	Deer mouse
Peromyscus leucopus	White-footed mouse
Synaptomys cooperi	Southern lemming mouse
Clethrionomys gapperi	Red-backed mouse
Microtus pennsylvanicus	Meadow vole
Ondrata zibethicus	Common muskrat
Rattus norvegicus	Norway rat
Mus musculus	House mouse
Zapus hudsonicus	Meadow jumping mouse
Napaeozapus insignis	Woodland jumping mouse
Erethizon dorsatum	Porcupine
Canis latrans	Brush wolf
Vulpes vulpes	Red fox
Ursus americanus	Black bear
Procyon lotor	Raccoon
Mustela erminea	Short-tailed weasel
Mustela frenata	Long-tailed weasel
Mustela vison	Mink
Mephitis mephitis	Striped skunk
Lutra canadensis	Otter
Lynx canadensis	Lynx
Lynx rufus	Bobcat
Odocoileus virginianus	White-tailed deer

DISTRIBUTION

Dr. W.R. Effer	Design and Development, H10G01
Dr. D. Mills	Director of Research
Mr. D.A. Wismer (13)	Design and Development, H10F2
Mr. G.T. Haymes	Chemical Research
Mr. R.W. Sheehan (2)	Chemical Research
Mr. H. Balesic	Chemical Research
Ms. R.A. Nakrosius	Chemical Research

Public Reference Centre
Editorial Section (2)
Office Copies
Extra Copies